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USSR Report

AGRICULTURE

No. 1251

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TILLING AND CROPPING TECHNOLOGY

STATE OF WEATHER, CROPS IN LATE JULY REPORTED

LD081003 Moscow SEL'SKAYA ZHIZN' in Russian 3 Aug 80 p 1

[Report by Agrometerologist T. Bogdanova under the rubric "The USSR Hydrometeorological Center Reports"† "The Weather and the Crops"]

[Text] In most parts of the USSR's European territory the weather was warm in the last 10 days of July. Rainfall was slight. It was hot and mainly dry in southern and eastern parts of the Ukraine, in the North Caucasus and southern Volga area. The maximum temperature here was 31-39 degrees; 40-44 in parts of eastern Stavropolskiy Kray and southern Astrakhanskaya Oblast and Kalmytskaya ASSR. It was still rainy in the southwest of the European territory. There was a lot of rain in western oblasts of the Ukraine and, in the last days of the period, a good amount in Krasnodarskiy Kray and Rostovskaya Oblast.

The frontier of ripe winter grain crops has reached central and northern parts. Waxy ripeness was recorded in the central Chernozem, Volga-Vyatka, central, northwest and Urals regions, in the central Volga area and Estonia. It was apparent in parts of Arkhangelskaya and Volgodskaya oblasts, in Belorussia, Latvia and Lithuania. Early spring grain crops in most of the Ukraine, in the central Chernozem Zone, the middle Volga area, Orenburgskaya Oblast and Bashkirskaya ASSR, and also early sowings in the central region have reached the waxy ripeness phase. Barley has also reached waxy ripeness in the western part of the Baltic area and Belorussia. In more northerly and easterly regions early grain continues to swell. Development of early spring crops is still about 10 days ahead of average in the middle Volga area and the southern Urals.

Over the greater part of Moldavia and the Donets-Dnepr region, in the North Caucasus, the lower Volga area and southern Saratovskaya Oblast corn panicles and ears have flowered. Heading of panicles was observed in North Moldavia, in Cherkasskaya and Kiyevskaya oblasts, southern parts of Chernigovskaya Oblast and northern Sumskaya Oblast, in Belgorodskaya and Voronezhskaya oblasts and the northern half of Saratovskaya Oblast. Over the remaining part of the corn zone leaf formation continues, 11-15 leaves having formed. Over most of the Ukraine and in Krasnodarskiy and Stavropolskiy krays the plants are 160-180 cm tall; 230 cm tall in places.

In buckwheat the grain has been forming and swelling. Only in most southerly areas has the buckwheat ripened. Sunflowers have flowered everywhere with swelling achenes in the Ukraine, Moldavia and the North Caucasus.

In most potato-growing areas of the Ukraine and in the Central Chernozem region tuber growth was evident. Tuber formation had begun in Belorussia, the Baltic area and the north-west, central, Volga-Vyatka and Urals regions. Root growth continued in the main sugar beet zone.

In Moldavia tomatoes have reached flesh-colored ripeness and cucumbers, vegetable marrows and peppers have ripened. Raspberries, cherries, currants and gooseberries have ripened in the Central Chernozem Oblast.

The weather remained cool and rainy in the farming regions of Siberia and northern oblasts of Kazakhstan. In East Siberia there were 30-70 mm of rain; more than 70 mm in places. There were 4-6 days of rain; 7-8 days in places. Early spring grain crops have ripened in West Kazakhstan. Waxy ripeness was evident in early sowings in Kustanayskaya, Turgayskaya, Tselinogradskaya, Karagandinskaya, Pavlodarskaya, Semipalatinskaya and Vostochno-Kazakhstanskaya oblasts. In the remaining farming region of Siberia and northern oblasts of Kazakhstan most early spring grain crops were in the milky ripeness phase.

The weather remains hot and dry in the central Asian republics and South Kazakhstan. Cotton continued to flower and form bolls at a height of 6-75 cm. The overall number of developed bolls was near or somewhat more than normal and generally 2-3 bolls more than by the same time last year. At the end of the 10-day period the first bolls began to open 10-12 days earlier than usual in Surkhandarinskaya and Kashkadarinskaya oblasts and in southern parts of Maryyskaya, Kulyabskaya and Kurgan-Tyubinskaya oblasts.

CSO: 1824

LATVIAN WEATHER, CROP CONDITIONS IN EARLY JULY

Riga SOVETSKAYA LATVIYA in Russian 17 Jul 80 p 3

[Article by Agrometeorologist V. Knava; for related material see JPRS 76262, 20 August 1980, No 1249 of this series, pp 1-2]

[Text] During the first half of July the cool weather held. Daytime temperatures did not go above 18-24°. Downpours during the second week (in a majority of rayons 35-50 mm) exceeded the norm for precipitation by one and a half to two times, and in places in the central rayons in Latvia and on the Vidzemskaya Highland 60-70 mm fell, i.e. three to four times the norm.

Water logged soils made work for the equipment and drying of the hay more difficult. Harvesting of winter crops is expected to begin at the end of July. Winter and spring grains, sown in April, have reached the milky ripeness phase. Barley and oats are filling. Spring crops are 50-90 cm high (last year at this time they were 40-70 cm high). On some fields storm winds caused lodging in grain crops.

The early potatoes are flowering and in places the middle ripening varieties have begun flowering. The temperature regime in the soil is favorable for the formation of the tubers. However with the abundant moisture the conditions are right for the appearance of blight (phytophthora). The fields should be cared for and the proper actions taken in time.

The flax fiber is forming under good conditions. On many fields the flax has already flowered. The stalks are 50-60 cm high. The corn has reached a height of 40-80 cm, the weight of one plant on fields with high agrotechnology reaches 400 grams. In the eastern rayons, where there has long been a deficit of moisture the weight is 50-100 grams.

The second growth of timely cut grasses is coming back well, it is 20-30 cm high. The clover on seeded stretches is 65-80 cm nigh.

Cool weather and pouring rains will hold in the republic in the next few days.

CSO: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST NOTES FROM KIRGIZSTAN, KAZAKHSTAN

[Editorial Report] Moscow SEL'SKAYA ZHIZN' in Russian on 20 July 1980, page 1, carries an article that reports the harvest of grain [kolosovyye] in Oshskaya Oblast and the Chuyskaya Valley of Kirgizstan is in full swing. Despite the fact that in places while the grain was filling it was "seized" by hot weather, in many areas, especially higher up the spike turned out full weight and is giving 20 and more quintals of grain per hectare. The crop is good on irrigated land. There, they are getting over 40 to 45 quintals of grain per hectare.

In Kirgizstan they are taking measures to "even out" the harvest by increasing the amount of corn for grain, the area of which was increased this year to fulfill the pledges.

Grain crops are not ripening at the same time in the same zone, or even within the same rayon or farm. They consider this when they maneuver the equipment.

Moscow SEL'SKAYA ZHIZN' in Russian on 3 August 1980, page 1, reports a 500-kilometer march from the Chuyskaya Valley to the northeast of Kirgizstan, to the place of large-scale harvesting of abundant grain crops, has been completed by a harvest transport complex of the better equipment operators. Preliminary threshing indicates that agricultural workers in Issyk-Kul'skaya Oblast will get about 35 quintals of grain per hectare, a crop of 270,000 tons of grain.

Moscow SEL'SKAYA ZHIZN' in Russian on 27 July 1980, page 1, reports the harvest has begun in Vostochno-Kazakhstanskaya Oblast. The grain area amounts to 620,000 hectares.

CSO: 1824

GRAIN HARVEST NOTES FROM CENTRAL RSFSR, NORTH CAUCASUS

[Editorial Report] Moscow SOVETSKAYA ROSSIYA in Russian on 29 July 1980, page 1, reports in Belgorodskaya Oblast, despite the rains, they are harvesting at a fast pace. They are utilizing devices to harvest wet and lodged grain. Equipment operators are taking the crop from 35,000 to 40,000 hectares per day.

Equipment operators in the southern and central rayons of Udmurtia have begun harvesting rye--the main crop here.

The harvest has begun in the southern rayons of Ryazanskaya Oblast.

Moscow SEL'SKAYA ZHIZN' in Russian on 27 July 1980, page 1, notes in Rostovskaya Oblast the grain has been cut on an area of 2,800,000 hectares and threshed on 1,500,000 hectares.

Moscow IZVESTIYA in Russian on 2 August 1980, page 1, notes in the Chechen-Ingush ASSR grain was harvested in a short time in Zaterechnyy, Shelkovskiy, Gudermesskiy and Naurskiy rayons. The Chechen-Ingush ASSR will sell 78,000 tons of grain to the state.

CSO: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST NOTES FROM RSFSR

[Editorial Report] Moscow SOVETSKAYA ROSSIYA in Russian 6 Aug 80 on page 1 carries an article reporting enterprises in Ivanovskaya Oblast have begun selective cutting of winter wheat. Two phase harvesting of grain crops, and also complex utilization of equipment, which proved itself last year, is helping gain time. Due to the great gap between ripening dates for winter and spring crops, equipment for the first time, is being maneuvered not only between kolkhozes and sovkhozes but also between rayons in the oblast.

Moscow SOVETSKAYA ROSSIYA in Russian 8 Aug 80 p 1 reports the first 100,000 hectares of grain in Tul'skaya Oblast have been swathed in windrows. Equipment operators are harvesting in two phases. The equipment operators in Yefremovskiy, Dubenskiy and Kurkinskiy rayons are the harvest leaders.

Moscow SEL'SKAYA ZHIZN' in Russian 6 Aug 80 p 1 notes enterprises in the Mordov ASSR faced up to the tardy ripening of the grain with an accelerated pace of cutting. Complex mechanized detachments and links everywhere have begun two phase harvesting of winter crops. Grain growers in Zubovo-Polyanskiy, Temnikovskiy and Torbeyevskiy rayons, who have also begun thrashing, have significantly accelerated cutting. The harvest of grain and pulse crops, grown on an area of 800,000 hectares, will be finished in 10 to 12 working days.

Moscow SEL'SKAYA ZHIZN' in Russian 8 Aug 80 p 1 reports it has been an exceptionally hot, dry summer in Yakutia. This has hastened the ripening of the grain. Enterprises in Yakutia began harvesting grain 20 days earlier than last year. They will harvest about 57,000 hectares of grain here this year.

Moscow SOVETSKAYA ROSSIYA in Russian 8 Aug 80 p 1 reports equipment operators in the Soviet Far East will harvest grain from an area of a million hectares. The harvest is now going forth at all enterprises in the region. One-third of the grain is already layed in windrows, 66 percent of that which has been cut has been thrashed.

CSO: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST, WEATHER NOTES FROM UKRAINE

[Editorial Report] Kiev SIL'S'KI VISTI in Ukrainian on 1 Aug 80 carries an article on p 4 that reports the battle on the fields of the Ukraine for an abundant 1980 harvest and the establishment of good basis for the future continues now in the face of great contrasts and whims of the weather.

The heat deficit which was noted earlier continued this year until the end of July. In view of this the sum of active temperatures (higher than 10°C) in the northwestern part of the republic stood around 75 to 85 percent, and on the rest of the territory 86 to 96 percent of the norm. Only in the southern oblasts on certain days in July did the thermometer reach the 30 to 35° mark, and in places even higher.

In connection with the cool wet weather, especially in the north west of the republic, in a majority of regions development of early grains as well as late crops, in particular corn, buckwheat, millet, sunflowers, sugar beets and vegetables, lags behind the usual by almost 2 weeks, and behind last year's dates by 25 to 30 days. Further the winter and early spring grains and pulses everywhere have matured simultaneously or with a small interval.

The July rains in a majority of regions made for good soil moisture. However in several areas this significantly complicated the tilling of the row crops and the harvesting of early grains, which ripened too unevenly even on one and the same field.

Kiev SIL'S'KI VISTI in Ukrainian 29 Jul 80 carries an article on p 1 by M. Tsupenko, head of the section for agrometeorology of the Ukrainian Republic Board for hydrometeorology and control of the environment. His article on corn crop conditions in Cherkasskaya Oblast makes the point that in the weather conditions which have prevailed, corn in a majority of oblasts is experiencing a significant deficit in effective temperatures. This to a certain degree makes for the development of weeds and negatively affects the formation of the grain.

The remainder of the article is devoted to the importance of pinching off side shoots to hasten maturation of the ears.

Kiev PRAVDA UKRAINY in Russian 14 Aug 80 p 1 carries a report from a kolkhoz in Chernobayevskiy Rayon, Cherkasskaya Oblast, that the grain here is difficult to harvest. Over large areas it is lodged, weeds have grown up. The combines have been with improved pickups, many joints have been strengthened. Enterprises in Cherkasskaya Oblast are intensifying the pace of the harvest. Equipment operators are facing up to the whims of the weather with good organization, grain growers' resourcefulness and persistance.

Moscow SEL'SKAYA ZHIZN' in Russian 6 Aug 80 p 1 notes the harvest on the grain fields of Rovenskaya Oblast began 3 weeks late. Over significant areas the winds and pouring rains lodged and twisted the grain. Under these adverse conditions the equipment operators are skillfully manuevering the equipment in order to gather the harvest without losses.

Moscow TRUD in Russian 30 Jul 80 p 1 reports grain growers in Odesskaya Oblast will gather 3,500,000 tons of grain this year. The goal is high--there has never been this much. Agricultural workers have grown a good crop. It is important now to gather it quickly and without losses.

Kiev PRAVDA UKRAINY in Russian 1 Aug 80 p 2 indicates Khar'kovskaya Oblast will sell 1,000,000 tons of grain to the State.

Kiev PRAVDA UKRAINY in Russian 8 Aug 80 p 2 reports a brief interview with the first secretary of the Tel'manovskiy Rayon, in Donetskaya Oblast, who comments that Tel'manovskiy Rayon is arid. Last fall they could not even sow the winter crops. Therefore in the spring they counted on barley. They sowed 20,000 hectares of the 31,000 hectares intended for grains [kolosovyye] to barley. They applied ammonia water and organic fertilizer. Now they are gathering 27 quintals per hectare.

Moscow SEL'SKAYA ZHIZN' in Russian 15 Aug 80 p 1 notes in L'vovskaya Oblast this year the harvest campaign much later than usual. Agricultural workers are making every effort to make up for lost time and gather the harvest in a short time. In the first 10 days in August kolkhozes and sovkhozes cut grain on half the harvest area. The harvest pace is fast in Radekhovskiy, Mostisskiy, Kameno-Bugskiy and Sokal'skiy Rayons. In order to more quickly gather the grain both two phase harvesting and direct combining are being employed. Thus every piece of harvest equipment is included in the work.

CSO: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST NOTES FROM RSFSR REPORTED

[Editorial Report] Moscow SEL'SKAYA ZHIZN' in Russian 15 Aug 80 p 1 reports that equipment operators in Altayskiy Kray have begun harvesting. Grain reception points here have accepted the first tons of grain. Grain growers in the largest grain growing area in Siberia will harvest the grain from the entire area, which exceeds 4,000,000 hectares, in 12 to 14 working days.

Moscow GUDOK in Russian 1 Aug 80 p 1 notes all procurement enterprises in Belgorodskaya Oblast have begun accepting grain from the new harvest. The kolkhozes and sovkhozes will sell no less than 850,000 tons of grain to the state. The first threshings show that there is the possibility of exceeding this goal--a majority of the enterprises have grown a good crop yielding 25 to 30 quintals per hectare.

Moscow TRUD in Russian 8 Aug 80 p 1 says that more than 90 percent of the wheat arriving at the elevators in Krasnodarskiy Kray has been evaluated as being of highest quality. The kolkhozes and sovkhozes in Krasnodarskiy Kray have attained such results for the first time. Agricultural workers here have already sold more than 2,500,000 tons of grain to the state. Of this 2,250,000 tons are strong and valuable wheat.

Moscow TRUD in Russian 13 Aug 80 p 1 notes the harvest has stepped beyond the Urals. In Kurganskaya Oblast winter rye, barley and peas are cut on 50,000 hectares. And in the southern rayons of Kurganskaya Oblast grain growers have begun cutting wheat.

Moscow GUDOK in Russian 1 Aug 80 p 1 repoted large scale harvesting of grain has begun in Mariy ASSR. A good grain crop has grown up on the fields this year. Agricultural workers in Zvenigovskiy, Volzhskiy and Medvedevskiy rayons brought their equipment out onto the fields ahead of the others. Grain growers in Mariy ASSR will harvest grain and pulse crops from almost 400,000 hectares.

Moscow SOVETSKAYA ROSSIYA in Russian 15 Aug 80 p 1 reports Krasnodarskiy Kray is continuing grain sales to the state. A total of 2,080,000 tons of grain have already arrived at the elevators and procurement points. Ninty percent of grain going into the granaries is strong and valuable winter wheat.

Moscow TRUD in Russian 8 Aug 80 p 1 states that equipment operators at enterprises in Northern Ossetia have finished harvesting winter grains precisely in the established schedule--10 calendar days.

Moscow SOVETSKAYA ROSSIYA in Russian 15 Aug 80 p 1 and Moscow SEL'SKAYA ZHIZN' in Russian 15 Aug 80 p 1 reports the harvest is in full swing on the steppes of Orenburgskaya Oblast. Grain has been cut on 3,000,000 hectares and threshed on 2,000,000 hectares. Kolkhozes and sovkhozes in the southern and central rayons, where the grain matures more quickly have already finished threshing. Agricultural workers in Ilekskiy Rayon were the first to finish harvesting.

Moscow SEL'SKAYA ZHIZN' in Russian 10 Aug 80 p 1 and Moscow GUDOK in Russian 10 Aug 80 p 1 notes that kolkhozes and sovkhozes in Pervomayskiy Rayon, Orenburgskaya Oblast, have set themselves the task of finishing the harvest in August. A decisive factor in accelerating the work was the detachment and link system of labor. As a result of its implementation harvest equipment productivity went up by 25 percent, which allowed the agricultural workers to cut 100,000 hectares of grain in the first week. This year no less than 200,000 tons of grain, primarily excellent Orenburg wheat, will go to the state granaries from here.

Moscow SEL'SKAYA ZHIZN' in Russian 15 Aug 80 p 1 notes in Saratovskaya Oblast the harvest pace is accelerating. Grain growers have gone over to cutting grain on the fourth and final million hectares earlier than usual. Productivity of the combine units has increased also in the threshing of the windrows.

CSO: 1824

GRAIN HARVEST NOTES FROM KAZAKHSTAN, WESTERN SIBERIA

[Editorial Report] The harvest campaign on the fields of Taldy-Kurganskaya Oblast has entered the decisive period. At the beginning of August over 100,000 tons of grain had been procured, 50,000 tons more than on this same date last year. It is gratifying to note that this year the quality is significantly higher. Thanks to this the bonus to the enterpises amounted to more than 5,000 tons. Along with this one has to consider that grain is not yet being thrashed in the better areas. They are first gathering the grain which stopped filling prematurely due to the heat. However, according to the estimate of the specialists, as a whole crop quality is good. Enterprises in Kirovskiy, Kapal'skiy, Kerbulakskiy and Alakul'skiy Rayons are forwarding excellent grain. Thus for Kapal-skiy Rayon the bonus amounts to 5.6 percent of the procured grain.

"Although the weather this did not especially favor the gathering of an abundant harvest on our bogharic lands," said Kerbulakskiy Rayon First Secretary A. Alpysbayev, "nevertheless, thanks to the implementation of a soil protection system of crop farming, and the carrying out of all work thoroughly and in good time, the grain growers accomplished much." [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 3 Aug 80 p 1]

Agricultural workers in Ural'skaya Oblast are intensifying the pace of the harvest. Grain crops have been cut on one million hectares and thrashed on half of the entire grain area. [Moscow GUDOK in Russian 10 Jul 80 p 1]

They have begun harvesting grain crops on the fields of Kurganskaya Oblast. This year the grain growers in Kurganskaya Oblast will harvest grain from an area exceeding 1,800,000 hectares. [Moscow SOVETSKAYA ROSSIYA in Russian 8 Aug 80 p 1]

The harvest campaign has come to western Siberia. In the steppe regions of Kemerovskaya Oblast the harvest of pulse crops has begun. Grain crops in Kemerovskaya Oblast have turned out well this year. Agricultural workers will harvest about a million hectares of grain crops. [Moscow GUDOK in Russian 10 Jul 80 p 1]

C50: 1824

GRAIN HARVEST NOTES FROM VOLGA

[Editorial Report] The kolkhozes and sovkhozes in Lopatinskiy Rayon, Penzenskaya Oblast, grew a good grain crop and were the first in the oblast to begin harvesting it. [Moscow SEL'SKAYA ZHIZN' in Russian 6 Aug 80 p 1]

The pace of the harvest in Penzenskaya Oblast is picking up. More than 800 harvest-transport complexes are cutting and thrashing grain in two shifts. Agricultural workers will sell 1,200,000 tons of grain to the State. [Moscow SOVETSKAYA ROSSIYA in Russian 6 Aug 80 p 1]

The grain harvest front is expanding on the fields of Ul'yanovskaya Oblast. All of the southern rayons as well as enterprises located across the Volga are harvesting on a large scale. Harvest-transport complexes in Starokulatkinskiy Rayon (and there are 27 of them) cut all the peas and swathed them in windrows on an area of 6,000 hectares in 45 working hours.

Kolkhozes in Ul'yanovskaya Oblast have begun grain sales to the State. [Moscow SEL'SKAYA ZHIZN' in Russian 30 Jul 80 p 1]

Grain growers in Starokulatkinskiy Rayon were the first in Ul'yanovskaya Oblast to finish cutting peas, which occupy about 200,000 hectares in the oblast. [Moscow SOVETSKAYA ROSSIYA in Russian 8 Aug 80 p 1]

In Saratovskaya Oblast three million hectares of grain have been cut. The first 300,000 tons of Saratov grain have been delivered to the elevators. [Moscow SOVETSKAYA ROSSIYA in Russian 6 Aug 80 p 1]

Agricultural workers in Ul'yanovskaya Oblast, overcoming the whims of the weather, are intensifying the pace of the harvest. [Moscow SEL'SKAYA ZHIZN' in Russian 12 Aug 80 p 1]

In Volgogradskaya Oblast as of 4 August grain had been cut on 2,970,500 hectares--73 percent of the plan. Windrows had been thrashed on 1,849,000 hectares, which constitutes 62 percent of the areas cut. Day and night trucks take grain to the elevators from enterprises in Kalachevskiy, Chernyshkovskiy, Mikhaylovskiy, Svetloyarskiy and other rayons. [Moscow PRAVDA in Russian 6 Aug 80 p 1]

Skillful manuevering of the equipment allowed the grain growers in Volgogradskaya Oblast to significantly increase the pace of the present campaign. Enterprises in Chernyshkovskaya Oblast were among the first in the oblast to finish cutting early grains. Windrower have been widely utilized here. This helped to significantly reduce the burden on the combines. They set aside 9 days here for the cutting of winter crops and barley. And these crops occupy 93,000 hectares. [Moscow SOVETSKAYA ROSSIYA in Russian 8 Aug 80 p 1 and Moscow PRAVDA in Russian 6 Aug 80 p 1]

The millionth ton of Volgograd grain was delivered to the elevators yesterday. Twenty-eight thousand trucks are conveying the "golden" load day and night. [Moscow TRUD in Russian 10 Aug 80 p 1]

Every harvest campaign has its own particulars. But this year in Voronezhskaya Oblast it is different from many in that all of the grain crops ripened almost simultaneously.

Enterprises in the southern rayons of the oblast--Kalacheyevskiy, Petropavlovskiy, Verkhnemamonskiy, Bogucharskiy, Rossoshanskiy, Ol'khovatskiy and others--have already harvest more than half the grain areas. [Moscow SEL'SKAYA ZHIZN' in Russian 6 Aug 80 p 1]

CSO: 1824

GRAIN HARVEST NOTES FROM LOWER DON, NORTH CAUCASUS

[Editorial Report] Workers in Yegorlykskiy Rayon were the first in Rostovskaya Oblast to finish harvesting. Cutting of grain into windrows went forth in 3 days and thrashing an area of 58,000 hectares in 10.

This success was achieved under difficult conditions was achieved thanks to the high skill of the equipment operators and the precise organization of the harvest conveyer. The harvest campaign on the grain fields of the Don is reaching its zenith. [Moscow SEL'SKAYA ZHIZN' in Russian 23 Jul 80 p 1]

Agricultural workers in Rostovskaya Oblast have sent 1,000,000 tons of grain from the new harvest to the State granaries. The harvest campaign on the Don has its climax.

The flow of grain grows with every day. Workers in Yegorlyskiy, Peschanokopskiy and Bagayevskiy Rayons have reported completing the harvest of early grains. [Moscow SEL'SKAYA ZHIZN' in Russian 25 Jul 80 p 1]

Following the agricultural workers in Yegorlykskiy Rayon workers at kolkhozes and sovkhozes in Sal'skiy, Bagayevskiy and Peschanovskiy Rayons finished thrashing the harvest in 8 to 10 days. Grain in Rostovskaya Oblast has been cut on 2,800,000 hectares and thrashed on 1,500,000 hectares. The first million tons of grain have been delivered to the elevators, more than a fourth of it is strong and valuable wheat. [Moscow SEL'SKAYA ZHIZN' in Russian 27 Jul 80 p 2]

Equipment operators in Stavropol'skiy Kray have taken the harvest campaign through the zenith and begun harvesting grain on the final third of the crop area. The harvest is already completely gathered from more than 1,200,000 hectares.

The harvest in Stavropol'skiy Kray coincided with a prolonged heat wave, which held the thermometer constant beyond the 30° mark. Despite the heat and sukhoveys the Stavropol grain growers are thrashing grain on an area of over 100,000 hectares a day. [Moscow SEL'SKAYA ZHIZN' in Russian 23 Jul 80 p 2]

The receipt for payment for a million tons of grain delivered to the elevator, which the field workers in Stavropol'skiy Kray have received, reflects the accelerating pace of grain sales to the State.

Filling of the grain in the steppes of Stavropol'skiy Kray coincided this year with a prolonged heat wave, which did not allow the spike to develop fully everywhere. However enterprises are gathering a good harvest from every hectare of crop land. Already many years in a row local grain growers have sown the land only with first class seed with the simultaneous application of fertilizers.

A weighty grain crop has grown up in Petrovskiy, Ipatovskiy and Apanasenkovskiy Rayons. [Moscow SEL'SKAYA ZHIZN' in Russian 26 Jul 80 p 1]

Equipment operators in the steppe region of Stavropol'skiy Kray have finished harvesting winter and spring grains on an area totalling about 1,800,000 hectares. The grain fields here are not only extensive but also situated in different climatic zones--from the approaches to the North Caucasus Mountain areas to the Caspian semi-deserts. The crop ripens at different times. However the steppe men everywhere conducted large scale threshing according to the schedule, ruling out losses.

The harvest campaign has shifted to the groat crop fields and also to the uplands, where the grain ripens significantly later. Having fulfilled the yearly plan for grain sales to the State, many kolkhozes and sovkhozes in Stavropol'skiy Kray are continuing to send grain to the elevators toward increased pledges. [Moscow SEL'SKAYA ZHIZN' in Russian 9 Aug 80 p 1]

Agricultural workers in Stavropol'skiy Kray have sent 1,866,000 tons of grain to the State granaries. More than 1,700,000 tons of high quality strong and valuable wheat have been delivered to the elevators. Grain sales are continuing. The harvest and sale of groat crops are in progress. [Moscow TRUD in Russian 10 Aug 80 p 1]

CSO: 1824

GRAIN HARVEST NOTES FROM MOLDAVIA

[Editorial Report] Convoys with strong wheat have been sent to the granaries from enterprises in the south of Moldavia. They have been given the green light and the right to off load out of order.

It has not been that long ago that Moldavia produced little strong and valuable wheat. The baking qualities of the wheat grown here have been improved with imported wheat with increased gluten content. For the first time all enterprises are growing it, having resolved to high quality wheat from every second or third hectare. Last year's experience showed proved the possibility of this, when strong and valuable varieties made up three fourths of the grain sold to the State by some rayons. [Moscow SEL'SKAYA ZHIZN' in Russian 25 Jul 80 p 1]

The grain field in Moldavia is not large--scarcely more than 900,000 hectares. And they will get over 3,700,000 tons of wheat, corn and pulses from this area. They plan to sell the State no less than 1,000,000 tons of grain. This means that they must gather more than 40 quintals per hectare.

A fast pace reflects favorably on the quality of the crop. During the harvest the two sides of the matter are interrelated. If the optimum dates for cutting and thrashing are not observed you can not get strong and valuable wheat. And we are counting on almost half the grain area for such grain.

In order to raise the quality of the grain, leaf feeding of the crops was carried out on previously selected stretches just before the harvest. [Moscow PRAVDA in Russian 29 Jul 80 p 1]

Grain growers in Moldavia will sell 200,000 tons of strong and valuable wheat to the State this year.

Complex mechanized detachments are well organized during these intense days in Kriulyanskiy, Kutuzovskiy, Telenesht skiy and Orgeyevskiy Rayons. Unfortunately they are not skillfully utilizing the richest opportunities everywhere. Enterprises in Komratskiy, Kantemirskiy, Suvorovskiy and Chimishliyskiy Rayons, where the harvest is already in full swing, are devoting little attention to increasing grain quality.

The experience of the leading enterprises in the republic shows that Moldavia can produce a significant quantity of strong and valuable wheat. The mastery of the grain growers shows in the skill of utilizing this untapped resource. [Moscow IZVESTIYA in Russian 30 Jul 80 p 1]

Agricultural workers in Moldavia are now harvesting at a high speed under adverse weather conditions. [Moscow SEL'SKAYA ZHIZN' In Russian 6 Aug 80 p 1]

In Moldavia they are harvesting grain from 25,000 to 28,000 hectares per day. [Moscow GUDOK in Russian 10 Aug 80 p 1]

CSO: 1824

GRAIN HARVEST NOTES FROM BALTIC, BELORUSSIA

[Editorial Report] The harvest has come to Estonia. Grain from the new harvest went to the warehouses in Kingiseppskiy and Khaapsaluskiy Rayons.

Combine operators in Estonia are laboring under adverse conditions: due to pouring rains the grain is strongly lodged, and the simultaneous ripening of various varieties complicates the work of the harvest conveyer still further. [Moscow SEL'SKAYA ZHIZN' in Russian 30 Jul 80 p 1]

Lithuania will gather 28 quintals grain per hectare. [Moscow PRAVDA in Russian 23 May 80 p 1]

The harvest campaign has come to the grainfields of Lithuania. Thirteen hundred harvest-transport detachments will work day and night to finish the harvest in a short time. The combines are equipped with devices allowing them to harvest lodged grain. Agricultural workers in Lithuania will gather no less than 3,200,000 tons of grain. [Moscow TRUD in Russian 6 Aug 80 p 1 and Moscow SEL'SKAYA ZHIZN' in Russian 6 Aug 80 p 1]

The harvest has begun on the fields of Brestskaya Oblast. The kokhozes and sovkhozes will harvest grain and pulse crops from 415,000 hectares. This year it is going forth under adverse conditions. Frequent pouring rains and strong winds have lodged tall stalked grain over significant areas. Almost a thousand units have been half-tracked, or equipped with doubled leading wheels for work on waterlogged fields or drained swamp soils. They are using ZhSK-4 windrowers and Ye-301 mowers to cut lodged grain into windrows. They are using two phase harvesting widely, which is productive for grain ripening at different times. [Moscow SEL'SKAYA ZHIZN' in Russian 9 Aug 80 p 1]

CSO: 1824

BRIEFS

BEET CROP FROM KRASNODARSKIY KRAY--The sugar beet area in Krasnodarskiy Kray is extensive--213,000 hectares. Sugar beet growers will send 6,190,000 tons of sugar beets to the State, attaining a yield of 320 quintals of sugar beets per hectare. In 1978 a rule went into effect forbidding enterprises to accept beets with impurities exceeding seven percent. In 1979 the indicator was dropped to six percent. As a result impurities decreased significantly and the condition of the beets went up from 85 to 94 percent. This had a positive effect on their preservation and increase in the output of sugar. [Text] [Krasnodar SEL'SKIYE ZORI in Russian No 6, Jun 80 p 8]

CSO: 1824

SUGAR BEET PROCUREMENT, PRODUCTION IN UKRAINE

Kiev SIL'S'KI VISTI in Ukrainian 8 Jun 80 p 2

[Article by I. Stepanenko, deputy chairman, Ukr SSR Council of Ministers on: "The Beet Field Must Become More Productive"]

[Text] Beet production and the sugar industry occupy one of the leading places in the agro-industrial complex of our republic; almost half of the country's total sugar beet crop is centered on its fields. Gross crop yields and sugar production constitute more than 60 percent of the all-union output.

Particularly noticeable improvements in the development of these areas occurred after the March (1965) CC CPSU Plenum. Following a consistent realization of the Party course towards an all-around agricultural intensification, the material-technological basis of beet sowing farms and processing enterprises grew markedly, the methods and technology of root and sugar production were improved, and worker skills in these areas were raised also. Average yearly beet yield in the present five-year plan increased compared to 1961-1965 from 198 quintals to 307 quintals, state beet procurement increased by one and a half times. Work expenditures in growing a quintal of sugar raw material decreased by more than two times.

There has been further growth in sugar industry also. During the past fifteen years eleven large sugar factories have been constructed in the republic, and most of the active enterprises have been renovated. Factory production potential for the same period grew one and a half times. Work expenditures in processing one hundred tons of beets compared to 1965 decreased by three times.

Marked changes occurred in production organization. During the last few years in our republic a valuable work cooperation has been initiated between beet growers and sugar production workers in the Yampilskiy Rayon directed towards obtaining the highest possible end results--maximal sugar production per plantation hectare. Competition among the

agro-industrial complex collectives for obtaining the maximal amount of end product per crop hectare helped to improve the quality and raise work results. Even last year in unfavorable weather conditions high beet field productivity was achieved in a number of oblasts, many rayons and farms by combining beet grower and sugar production worker efforts to obtain the best possible end results. If on the whole the average sugar output amounted to 25.1 quintals per hectare, it amounted to 33.5 in Kievskaya Oblast and 31 quintals in Cherkasskaya Oblast. In the Zhashkivskiy Rayon of Cherkasskaya Oblast, Husyatinskiy of Ternopolskaya, Myronivskiy in Kievskaya Oblast 40-43 quintals were obtained per hectare, and in the Yampilskiy Rayon, Vinnitskaya Oblast, almost 49 quintals per hectare.

Although the work of beet growers, sugar industry workers and other area workers involved with further improvement of sugar beet production is highly valued, still the fact must be noted that quite a few problems arise and shortcomings and shortfalls are permitted in the process of mastering progressive beet growing technology. Beet sowing farms are not yet fully supplied with highly productive, one-seed varieties and beet hybrids, equipment variety is lacking, not all machines furnished to beet growers are suitable for progressive technology, there is need for herbicides, for chemical means of protecting plants from pests and diseases.

An analysis of beet growing shows that in addition to unfavorable weather conditions which have been occurring periodically in recent times, low work organization level remains the chief reason for unsatisfactory results on a number of farms.

Sowing within optimal sowing dates maintaining a high agro-technological level assures a good harvest. Yet, on specific farms dates for this work are inadmissibly delayed. Timely and high quality beet planting density establishment plays an important role in obtaining a good harvest. Still, some farms instead of ten to twelve days stretch out this work for the whole month with a resultant 25-30 quintal sugar raw material shortfall. Thinned plants have a negative effect on the harvest also. It should not be generally tolerated, for example, that last year on farms in Nikolaevskaya, Poltavskaya and Dnepropetrovskaya Oblasts plant density per hectare was lower than optimal, 14,000-17,000 plants, and in Rovenskaya, Volynskaya, Odesskaya, Kirovogradskaya Oblasts 9,000 to 11,000 plants per hectare. Lowering of plant density even by a thousand plants per hectare decreases the yield by three and more quintals.

On a number of farms quite a few losses are allowed during harvest.

High quality raw material sugar production is dependent both upon an exact harvesting regime and also on the shortening of this process. For example, last year in Kievskaya Oblast harvesting and processing was begun early, comparatively speaking, and until the end of September as many beets were harvested each day as could be processed in sugar factories considering

the 24 hour work production reserves. Mass harvesting was conducted between 20-25 September and was accomplished earlier than generally within the republic. Special attention was given to harvesting quality. Beet receiving centers obtained raw material in accordance with established receiving conditions, as a result of which sugar output for the season amounted to 12.3 percent (the average within the republic being 11 percent). Each plantation hectare yielded 33.5 quintals of sugar.

Along with this certain excesses have been noted in some oblasts in recent years: With a more delayed harvest beginning September tasks are markedly overfulfilled and large reserves of roots from earlier harvesting accumulate in factories with the result that in ten to fifteen days the raw material begins to spoil; or, harvesting and especially raw material transport is much delayed so that beets often freeze and thaw several times becoming unsuitable for longer storage. Last year, for example, in Kharkovskaya and Odesskaya Oblasts the task of harvesting beets by September 24 was overfulfilled one and a half times, and in Vinnitskaya, Kirovogradskaya and Lvovskaya Oblasts a considerable delay in beet transport was allowed: in Bershadskiy Rayon, Vinnitskaya Oblast beets arrived from the fields even in January.

Violations of sugar beet growing agro-technology and their harvesting regime became the main reasons for a marked lowering of beet field productivity. Thus in Kharkovskaya, Kirovogradskaya, Odesskaya and several other oblasts last year only 20-21 quintals of sugar were produced per plantation hectare.

This year because of a slow spring field work began much later; however, now conditions are favorable for good plant development. Specific crop care organization will provide for a visible harvest increase and will compensate for the lost time.

Procured raw material quality is an urgent problem for today. An improvement in sugar beet quality within the present procurement scale has an important economic meaning. Raising the root sugar content even by one percent yields almost 500,000 tons of sugar per year additionally from the same raw material.

Unfortunately, along with a general beet harvest increase, the root sugar content decreased markedly in the last few years. This is true especially on farms in Kharkovskaya, Kirovogradskaya and Odesskaya Oblasts although conditions for beet growing and root sugar accumulation are rather favorable here. Other qualitative indices also worsened. A considerable number of roots arrive at the receiving centers damaged by the working parts of harvesting machines. The number of additives in procured raw material also increased, especially soil, sugar beet tops and other plant remains affecting prolonged storage, and lowering production processing indices.

in order to improve sugar beet quality and raise sugar production a government decision beginning this year provides for a new system of payment for raw material rendered according to its sugar content. Along with improvement in beet growing technology, it is important to introduce this progressive system promptly in an organized manner.

Effective utilization of production reserves will assist the beet growers in achieving the projected goal, and will provide processing enterprises with high quality raw material.

Yet, this is not the only problem. At the July (1978) CC Ukrainian Communist Party Plenum, Politburo member CC CPSU, First Secretary CC Ukrainian Communist Party Comrade V.V. Shcherbyts'kyy noted: "Particularly disturbing is the fact that in recent years regardless of a beet procurement increase, sugar production is growing slowly. One of the main reasons for this is the lowered sugar content of raw material. A marked sugar shortfall results also from violations in beet storage rules and their processing technology. The sugar refining period remains extended. Along with this, a number of factories do not utilize their potential permitting marked delays."

Therefore, along with measures towards the removal of "narrow" spots and shortcomings in beet production, a lot of work has to be done towards further improvement in the storage and processing of machine grown beets, and a more complete reserve utilization.

A progressive sugar beet storage technology is being introduced in the republic which is economically very effective. Even in last year's complex weather conditions at the Myronivskiy and Salivonkivskiy sugar refineries in Kievskaya Oblast, Zbaraz'kiy sugar refinery in Ternopol'skaya Oblast, Berezinskiy sugar refinery in Cherkasskaya Oblast and several others storage beet root losses were lower than normal and the sugar yield in the second half of the year was more than 13 percent as against 11.3 percent average within the whole republic. Where an irresponsible approach was evident, progressive technology was not utilized and satisfactory results were not obtained. This year it is essential to complete the equipment of beet receiving centers in order to introduce new, progressive technology in all factories in the coming years.

Particular attention should be paid to shortening raw material processing time. Work data from the sugar industry for the last four years shows that this yields good results: If during the first ninety 24-hour periods the sugar yield on the average amounts to 11.5 percent, than in the following production period it amounts to only 7.6 percent. To shorten processing time and to utilize raw material more effectively a marked intensification of production potential is expected both from the construction of large, new sugar refineries as well as from complex renovation of now active enterprises. Steps will be taken also towards further growth in production technological level.

However, shortcomings in the utilization of the present potential should be corrected first. In the second half of last year their utilization coefficient amounted to 86 percent of the normative 90. This index was too low in activated and renovated factories: Orzhytskiy in Poltavskaya Oblast, Radekhivskiy in Lvovskaya, Haysinskiy and Derebchynskiy in Vinnitskaya Oblast, Gorokhovskiy in Volynskaya, Khorostkivskiy in Ternopol'skaya Oblast and several others.

The basic reason for this is untimely and low quality material-technological basis preparation in processing enterprises during the sugar-refining season as a result of which many factories start production without proper organization and do not fulfill their tasks in beet processing and sugar production over an extended period, experiencing delays. Lengthy delays were noted especially in the Sumskiy and Khmelnitskiy production agricultural enterprises.

Prior to the start of the season, sugar industry workers and others who are connected with it must solve all problems related to highly productive and uninterrupted enterprise work during the whole production period, liquidating unplanned delays, attaining better potential utilization of active and renovated factories.

Several other moments which affect the beet field production increase should be considered also.

First of all, farms should be supplied with more productive, one-seed seed varieties suitable for mechanized sugar beet growing. In recent years plant breeders have grown a number of new, promising, one-seeded varieties and hybrids: "Yaltushkivs'kyy-30," Bilotserkivs'kyy-34," and "Vinnyts'kyy-10" which are higher in yield and sugar content than those regionalized previously, and are noted for an increased one-seededness and uniformity. Starting next year, a one-seeded diploid hybrid "Yuvileynyy" will be regionalized in the Cherkassy area on a sterile base. During state trial in this oblast it superceded earlier regionalized varieties in yield by 32 quintals per hectare, and in sugar content by 0.3 percent.

The Ukrainian Ministry of Food Industry, the Ukrainian Ministry of Agriculture, and the All-Union Scientific Research Institute of Sugar Beets should do everything possible to speed up the propagation and introduction into production of these highly productive varieties and hybrids. Sugar beet seed growing without seed plants should be speeded up also allowing new varieties into the field, decreasing manual work markedly, providing a high yield and raising the quality of sowing material.

Beet sowing farms should be better equipped with technology and chemical preparations if they are to change to mechanized beet production. Machine builders and chemists have accomplished a lot in this direction, yet much remains to be done. In particular, machine builders are slow in solving

problems relating to improvements in seed plant machines, beet seeders, thinners and leaders. The quality of six-row harvesting complexes manufactured by Ternopol' and Dnepropetrovsk combine factories should be further improved. It is especially important to modify beet-top harvesters as soon as possible and to improve the working parts of root harvesting machines since quite a few beets are damaged by them and are thus lost. The Kalynivskiy machine building factory is holding up sugar refinery beet root storage machines equipped for additional root cleaning from foreign additives and their treatment with chemical preparations prior to placement in covered piles. Beet growers have quite a few complaints against chemists in connection with the insufficient supplies of highly effective herbicides without which fully mechanized beet growing cannot be achieved.

Beet growers and sugar industry workers have been given important tasks. Even this year procurement of raw material and sugar production must be markedly increased, a basis for further production growth in the next five-year plan must be established. These tasks will be achieved primarily by raising the root yield and sugar content, and also by raising the level of sugar beet production intensification, by wide application of the experience of beet growers and sugar refinery workers from Yampilskiy Rayon in increasing the sugar output of each beet field hectare.

Beet field production increase work is many-sided and its success depends not only on beet growers and sugar industry workers but also on many organizations and departments of the republic, local party and Soviet organs pay more attention to these important areas, use concrete measures to eliminate shortcomings and ensure better use of production reserves. Scientists should provide suitable assistance also, especially collectives at the All-Union Scientific Research Institute of Sugar Beets, All-Union Scientific Research Institute of Sugar Industry and other institutions.

There is no doubt that the republic's beet growers and sugar industry workers will not only fulfill but will also overfulfill beet procurement and sugar production goals in the final year of the five-year plan preparing thus the basis for further development of these areas.

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PROGRESS IN SUGAR BEET PROCESSING IN RSFSR HERALDED

Moscow SEL'SKOYE KHOZYAYSTVO ROSSII in Russian No 7, Jul 80 p 36

[Article by M. Sushkov, director of the Rossakhsovekla [Russian Sugar Beet] Association: "Widespread Support for the Incentives of Yampol'skiy Rayon"]

[Text] The resolutions passed by the CPSU Central Committee and the USSR Council of Ministers in recent years, "On Measures to Further Increase the Production and Procurement of Sugar Beets and the Procurement of Sugar in 1976-1980," and "On the Complex Mechanization and Chemization of Cultivating Sugar Beets and on the Continued Development of the Sugar Industry," foresaw the extensive measures that are directed at increasing the effectiveness of beet farming. In fulfilling them, many beet-farming enterprises noticeably increased the production and procurement of sugar beets, having accumulated a great deal of experience in the mechanized cultivation and harvesting of this crop. They also produce stable harvests. Thus, the kolkhozes and sovkhozes of Korenevskiy Rayon, Kurskaya Oblast, with an area of 6,600 hectares in 1979 produced 275 quintals of roots per hectare, thereby fulfilling the plan for the sale of beets to the state by 104.6 percent. Since the beginning of the five-year plan the plan has been fulfilled by 110 percent. In this rayon especially high indicators were achieved by the Kolkhoz 8 Marta. On each of 370 hectares it produced 340 quintals of roots and fulfilled its procurement plan by 138 percent. Kolkhoz coffers received over 41,000 rubles of clear income from the sale of beets.

The 300-quintal mark was surpassed by the beet farmers of the Kolkhoz imeni Kirov of Buturlinovskiy Rayon, the Kolkhoz imeni Karl Marx of Semilukskiy Rayon, the Ertil'skiy Sovkhoz of Ertil'skiy Rayon in Voronezhskaya Oblast, the Zarya Kolkhoz of Koshekhabl'skiy Rayon in Adygeyskaya Autonomous Oblast, the Kaz'minskiy Kolkhoz in Kochubeyevskiy Rayon of Stavropol'skiy Kray, the Shalinskiy Sovkhoz of Shalinskiy Rayon in Chechena-Ingushskaya ASSR and many other enterprises where beet farming has become a highly-profitable branch.

But it is important not only to increase production and fulfill procurement plans but also to supply plants with raw materials having a high sugar content. At the same time in a number of kolkhozes and sovkhozes the sugar content in the roots is decreasing, which is sometimes related to a violation

of agrotechnology. In 1979 the beet-sowing enterprises of the republic delivered to plants 4.1 million tons of roots that were higher in sugar content than the base figure; 1.5 million tons that were equal to it; and 11.7 million tons that were lower. For example, for exceeding the base sugar content of roots the monetary bonuses for kolkhozes and sovkhozes in Voronezhskaya, Kurskaya, Lipetskaya and Tambovskaya oblast comprised 274,000 rubles. This is why, by drawing on the achievements of science and by considering the characteristics of each plantation, it is essential to utilize all methods that will raise the quality of root crops.

In connection with this we should give some attention to the initiative of beet farmers and workers of the sugar plant in Yampol'skiy Rayon, Vinnitskaya Oblast, who by persistently realizing a single plan for the cultivation, procurement, storage and processing of beets were able to achieve an improvement in the effectiveness of production in beet-sowing enterprises as well as in the sugar plant. This type of cooperation should be supported extensively. This is extremely important because the beet-sowing enterprises of the republic are lagging in fulfilling the plan for 4 years of the five-year plan concerning the sale of beets to the state.

The initiative of the workers of Yampol'skiy Rayon did not arise suddenly. It was preceded by years of stubborn battles for the harvest. Whereas during the Seventh Five-Year Plan the yield comprised an average of 287 quintals of roots per hectare in the rayon, in the eighth--385, ninth--417, during the years of the 10th Five-Year Plan the figure has surpassed 430 quintals. When the July 1978 Plenum of the CPSU Central Committee included increasing the production and procurement of sugar beets among its priority goals, the beet farmers of Yampol'skiy Rayon decided to increase the productivity of the hectare even further. The achievements of the past five-year plans have become a good foundation for this.

The secret of the success of Yampol'sk farmers lies in the precise organization of labor, in the growing quality of farming, in the coordination of work between partners and in the aid of workers from the sugar plant to beet farmers and in transportation enterprises. Joint efforts in the struggle for the highest results--the maximal sugar output per hectare of beet fields--enabled the rayon's workers in 1979 to produce 441 quintals of roots on each of 8,200 hectares, to harvest them on schedule and to ship them to the plant with the great aid of transportation workers. The rayon's enterprises sold the state over 328,000 tons of roots with a sugar content of 17.5 percent. By means of above-plan procurement, decreased losses during transportation, storage and processing of raw materials and raising the average daily productivity of the plant, the sugar plant workers increased the output of final products from 1 quintal of beets to 12.9 percent, and on the whole each hectare of the beet field produced 50.6 quintals of sugar.

8228
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BETTER OILSEED CROP PRESERVATION IN KAZAKHSTAN

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 27 May 80 p 3

[Article: "Preserving the Harvest of Oilseed Crops"]

[Text] The Central Committee of the Kazakhstan CP and the Kazakh SSR Council of Ministers have passed a resolution, "On Urgent Measures to Prepare the Material-Technical Base of the Ministry of Procurement of the Kazakh SSR for the Reception and Preservation of Grain and Seed of Oil-Bearing Crops From the 1980 Harvest." The Ministry of Procurement of the Kazakh SSR, rayon and oblast party committees of Kazakhstan, and oblast and rayon executive committees are obliged to secure the timely preparation of grain-reception and grain-processing enterprises for the uninterrupted reception, processing and storage of grain and seeds of oil-bearing crops from the 1980 harvest.

Oblast executive committees and the corresponding ministries of the Kazakh SSR must realize the priority delivery of reinforced ferro-concrete structures and parts, local building materials necessary for the building and repair of grain storehouses, seed-cleaning shops, paved platforms and other structures involved in the reception, processing and storage of grain and seeds of oil-bearing crops.

The Central Committee of the Kazakh CP and the Kazakh SSR Council of Ministers have expressed their certainty that party, soviet, trade union and komsomol organizations, the collectives of grain-reception, grain-processing, industrial and transportation enterprises and organizations will take all measures to secure the uninterrupted reception, drying, cleaning and complete preservation of grain and seed from oil-bearing crops of the 1980 harvest.

8228
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SUNFLOWER PRODUCT AVAILABILITY DISCUSSED

Moscow SEL'SKAYA NOV' in Russian No 6, Jun 80 p 19

[Untitled article by V. Ivashchenko, senior engineer of the Krasnodar Experimental Oil Plant]

[Text] Soviet scientists, and especially twice Hero of Socialist Labor Academician V. S. Pustovoyt, have developed productive varieties with a high oil content reaching 52 percent. These varieties have enabled us to increase the production of food vegetable oil to 7.5 kilograms per person per year. However, calculations show that to fully supply the need for food as well as industrial oil, 15-16 kilograms per person are required. In order to solve this problem it is necessary not only to increase the area in oil-bearing crops and to raise their productivity but to also utilize raw materials more effectively.

Modern production of vegetable oil is organized in such a way that almost the entire mass of seeds is utilized and nothing is lost. Plants that produce this product are highly mechanized and automated. Oil is obtained here by means of pressing and extraction--extraction from oilcakes which remain after pressing with the aid of solvents. Vegetable oil from plants is put on the market in its pure form and delivered to other plants that produce margarine, mayonnaise, toilet soap, laquers and paints.

The waste products are used by plants to produce oil-seed meal, a high-quality feed for livestock. Even the seed hulls are used as chemical raw materials rather than for feed purposes. The modern plant processes 700-750 tons of oil-bearing seed per day. Most of the oil is refined or cleaned, with the removal of phosphatides (precipitant appearing in unrefined oil), which is also a useful product.

Our plant has specialized in the extraction of various food vegetable oils for about 20 years. Each year it produces 22,000-25,000 tons of oil, including 1,300 tons which are bottled. Our products are well known far beyond the boundaries of the Kuban', particularly our refined, deodorized corn oil. However, even our sunflower oil, which undergoes the same treatment of removal of admixtures and specific odors, is almost equal to it in composition and taste.

Since 1979 the plant has been producing a new type of oil called "Kuban' Salad Oil." It closely resembles olive oil in composition and taste. It is produced from sunflower seeds of the Pervenets variety, which was developed by a group of Kuban' breeders headed by K. I. Soldatov. Because of its taste, this product has been quickly accepted by the population and is in great demand. An increase in the crop stand of the Pervenets variety would enable us to produce more salad oil and to curtail the import of olive oil into the country.

8228
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DEVELOPMENT OF FEED PRODUCTION AS BRANCH DISCUSSED

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVO in Russian No 7, Jul 80 pp 35-40

[Article by I. Polovenko: "Branch Development for Feed Production"]

[Text] The principal path to be followed for creating a strong feed base for the country -- complex development and strengthening of the feed production economy as a single functional system within the national economy. This system includes kolkhoz-sovkhoz production, state and cooperative mixed feed enterprises, departments and enterprises for the production of feed additives, the microbiological, chemical and fishing industries and also all branches of industry engaged in the processing of agricultural raw materials and in the production of various types of machines and equipment used in the production and preparation of feed.

Thus, feed production appears as the totality of its spheres within the system of agriculture (field, meadow-pasture and industrial) and also of the enterprises, departments and organizations of the country's agroindustrial complex.

During the period of the ninth and tenth five-year plans, no noticeable growth was recorded in the area used for forage crops and the weak growth in the yields obtained from field feed production and the low level of intensification of the meadow-pasture economy precluded the possibility of fully satisfying the feed requirements of animal husbandry. In 1975 the volume of feed consumed increased by only seven percent above the figure for 1971 and in 1978 compared to 1975 -- by 10 percent. Moreover, the number of animals increased more rapidly than did the production of feed. The low rates of growth for feed production were also affected by the unfavorable annual weather conditions. In addition, those departments of the APK [agroindustrial complex] which were associated with feed production participated only weakly in the work aimed at strengthening the feed base. This is why Comrade L.I. Brezhnev, during the July (1978) Plenum of the CPSU Central Committee, stated: "The Politburo attaches great importance to measures aimed at improving feed production. The need for creating a modern system of feed production, as a specialized branch of the national economy, has become very obvious. Such an endeavor is of great national importance.

Accordingly, a proper approach for creating the branch must be provided and efficient planning for feed production and material and technical support for the planned tasks introduced."

A search for the means and methods for strengthening the feed base can be more effective if the trends and principles governing its development over the past 10-15 years are revealed. Such an analysis will make it possible to outline truly practicable measures , both for the utilization of reserves and for improving the structure of the principal sources and spheres of feed production during the Eleventh Five-Year Plan.

Such an analysis calls for an examination of the status of feed production in its principal areas, consisting at the present time of an interrelated fabric of this specialized branch: field, meadow-pasture and industrial feed production. At the same time, an examination should be undertaken of the protein problem in feed production and of the organizational forms for common management and control over the development of feed production and technical support.

The first two areas of the branch are the spheres of feed production found mainly within the system of agriculture. The third sphere is that of the production of mixed feeds and various additives in the state and cooperative sectors.

In recent years the base for the sphere of field feed production has consisted of 118-124 million hectares of forage and pulse crop plantings and also the waste products of field crop husbandry. It furnishes 74-75 percent of the feed consumed in animal husbandry. Concentrates and also forage grain, which constitutes 75-82 percent of the mixed feed produced in the state and cooperative mixed feed industry, are produced here. During the past three five-year plans, noticeable changes have taken place in the grain forage crop structure of field feed production. In 1978 the grain forage crop area increased by 20.4 million hectares, or 56 percent, above the figure for 1965. However, the plantings of corn for grain and pulse crops were reduced by 0.5 and 1.8 million hectares respectively. This led to a noticeable shortage in corn grain and pulse crops, for the preparation of mixed feed in the state and cooperative industry. In order to make up for this shortage, more than 40 million tons of food wheat are being processed into mixed feed. In terms of its forage quality, this wheat is not considered to be a substitute for either pulse crops or corn. An improvement in the structure of the grain forage crop plantings must bring about an increase in the production of grain corn and pulse crops. The structure of the forage crop plantings during this same period was characterized by overall growth in the areas of 12.1 million hectares, or 22 percent, and especially in the plantings of perennial grasses -- by 90 percent, and also by a 20 percent reduction in the plantings of corn for silage.

An expansion of the plantings of perennial grass for hay ensured annual increases in the procurements of grass meal as an important ingredient in

the production of mixed feed. Rather than an expansion of the areas, the future development of feed production calls for an increase in the cropping power of all for. s and grain forage crops and improvements in the structure of the areas under crops, based upon rational crop rotation plans aimed at achieving a maximum yield of feed units and protein per hectare of area.

The largest reserve for growth in feed production in the sphere of field crop husbandry is that of raising cropping power to the level of the leading farms through the general introduction of a leading technology for the cultivation of forage and grain forage crops, the efficient utilization of fertilizers and the use of complex mechanization.

A second and extremely important factor with regard to growth in the production of feed resources is that of improving the structure of the areas under crops on the farms. A great amount of interest is being displayed in the experience gained at the Moldavian Scientific Research Institute of Field Crops and the Selektsiya Scientific-Production Association in the development and introduction, on farms throughout the oblast, of crop rotation plans for livestock farms and complexes. The association obtains 57 quintals of food units from 1 hectare of crop rotation plan space. This made it possible to fully meet the requirements of the interenterprise complexes for concentrates and green and succulent feeds and those of interenterprise mixed feed plants -- for the raw materials used in the production of grass meal.

At the kolkhozes imeni Kalinin and Druzhba in Zaleshchitskiy Rayon in Ternopol'skaya Oblast, owing to improvements in the structure of the areas under crops, correct crop rotation plans and the observance of leading agrotechnical methods, the yield of feed units per hectare of crop rotation plan space amounted to 79.9 and 71.6 quintals respectively in 1978, compared to 34.1 and 28 quintals in 1976. This ensured complete satisfaction of the feed requirements of the farms and it raised the milk yield per cow to 3,200 kilograms, with a profitability level for milk production in excess of 20 percent.

An equally important reserve for increasing the feed resources is that of employing repeated, post-harvest, intermediate and companion sowings, particularly in regions characterized by extended growing seasons. The possibility exists of introducing such sowings on an area of roughly 10-12 million hectares during the Eleventh Five-Year Plan.

Since the principal bulk of feed is furnished by field feed production, great interest is being displayed in the existing structure for this type of feed for the country as a whole, in the rates of growth for the individual types of feed and in the level of feeding per nominal head of cattle (see Table 1).

Based upon the data cited, it is evident that the consumption of concentrates in 1978 increased more than twofold compared to 1965 and succulent and

Table 1

Structure of Feed Consumed During 1965-1978 Period
(in millions of tons and for all categories of farms)

Types of Feed	1965	1975	1977	1978
Concentrated	65.3	118.9	143.0	145.9
Succulent feed	416.6	501.6	600.1	610.8
Including silage	166.7	171.1	205.4	200.8
Coarse Feed	164.0	237.6	235.1	240.8
Including hay	78.2	78.8	82.6	71.7
Pasture feed	373.4	386.7	380.0	379.6
Total amount of feed expended in feed units	278.5	368.5	403.0	409.6
Feed expenditure per nominal head of cattle, in quintals of feed units	22.5	25.1	27.3	26.9

coarse feeds -- by 46.6 percent. However, the consumption of hay decreased and the amount of pasture feed remains essentially at the same level.

With an increase in the overall mass of feed during the period under review of 46 percent, in a conversion for feed units, the feeding level per nominal head of cattle increased by only 21 percent, as a result of which the average annual rates of growth for the animals were higher. When we consider that only 75-80 percent of the protein feed resources required are being made available, then it becomes obvious that the presence of a disproportion in the feeding level and the protein supply is restraining growth in the productivity of animal husbandry. An inadequate feeding level and protein feed supply lead to a shortfall in animal husbandry products of roughly 1.8 to 2 million tons in a conversion for meat.

Considerable growth in concentrates in the structure of feed consumed is an indicator of qualitative growth in feed resources. However, more than 75 percent of the concentrates are used for large-horned cattle -- they constitute 45-50 percent of the feed rations. It is obvious that such large concentrate expenditures must be reduced by substituting succulent and coarse feed for a considerable portion of the concentrates: hay, haylage, silage, grass meal. As established in the data of scientific institutes, the proportion of concentrates in the feeding rations of cattle should ideally be 25-30 percent.

A reduction in the consumption of hay and perennial grasses and an identical level in the volumes of pasture feed are explained primarily by insufficient intensification in the sphere of meadow-pasture feed production. Meadow-pasture feed production is carried out on 370 million hectares, from which animal husbandry has obtained roughly 25-26 percent of all of its feed in recent years, whereas field feed production furnishes 75-74 percent of the feed.

The existing disproportion between the feed volumes obtained in the two mentioned spheres of feed production and the areas occupied by them is restraining the development of animal husbandry and the production of products by this branch. Thus a general intensification of the meadow-pasture economy and, on this basis, improvements in the yields of hay obtained from natural haying lands, an expansion of the areas of long-established cultivated pastures and also irrigation involving the use of fertilizers -- represent a great reserve for increasing feed production.

During the past 10 years, the hay yields obtained from natural haying lands have increased by only 0.5 quintals per hectare for the country as a whole. Noticeable increases took place in the cultivated pasture areas and in the flooding of pastures in Kazakhstan and Turkmenistan. At the same time, owing to a general breakdown in the system of pasture rotation and insufficient tending of the natural haying lands and pastures, large tracts of land were removed from use as a result of erosion processes.

The Eleventh Five-Year Plan calls for work to be carried out in connection with improving the haying lands and creating cultivated pastures on an area of 12.4 million hectares, creating 1.11 million hectares of irrigated haying lands and pastures and flooding 27.3 million hectares of pastures in desert, semi-desert and high mountain regions.

The experience of leading farms testifies to the availability of large reserves in this sphere of feed production. Thus the Nishan State Breeding Plant in Kashka-Darynskaya Oblast of Uzbekistan has approximately 150,000 hectares of pasture. Karakul sheep are bred at this farm. Active improvements are carried out on the pastures here by sowing them with summer cypress on an area of 2,000 hectares annually, using locally produced seed plants. This will make it possible during the next few years to have tens of thousands of highly productive pastures. In 1979 the plantings of irrigated alfalfa were expanded to 600 hectares on the farm, compared to only 200 hectares in 1976. Plantings of saxaul, summer cypress and other plants have removed the threat of a lack of fodder during severe winters and they have created the conditions required for increasing the number of sheep.

The intensive use of pastures has made it possible to create a two-year supply of feed and to increase the number of sheep in 1978 to 84,000, compared to only 70,000 in 1976. The plans call for the number of sheep to be increased to 123,000 by the end of 1980.

Great opportunities exist for increasing the production of feed on the bottom lands of rivers in the RSFSR, Kazakhstan and other regions, lands which are not being used adequately owing to a shortage of specialized equipment.

During the past few years, successful work has been carried out in the non-chernozem zone and other economic regions of the RSFSR and the Ukrainian SSR

by interfarm enterprises and associations in connection with feed production on bottom lands and reclaimed lands. Thus the Donskoye Interenterprise Association in Voronezhskaya Oblast, which was created in 1978 based upon floodlands belonging to nine kolkhozes, despite a shortage of equipment succeeded in pressing hay from an area of 70 hectares and transported it to the kolkhoz farms, implemented improvements in 200 hectares of pasture, harvested grass from an area of 2,654 hectares and procured 87,500 quintals of hay. The hay yield amounted to an average of 33 quintals per hectare, or two times more than the amount obtained earlier by the kolkhozes. Moreover, the hay yield from irrigated tracts of land ranged up to 55 quintals per hectare.

Many tens of millions of hectares of bottom land in the RSFSR, the Ukrainian SSR and other regions appear as an inexhaustible reserve for obtaining green feed and hay for livestock. According to estimates by the Siberian Scientific Research Institute of Feed, the bottom lands of Siberian rivers (Ob', Irtysh, Yenisey and others), assuming their intelligent use and the availability of meadow-reclamative equipment, are capable of satisfying the feed requirements of more than 1,000 livestock complexes, each having from 800 to 1,200 head.

The third sphere -- industrial feed production -- includes the state, cooperative and farm mixed feed industry, the waste products of enterprises engaged in processing agricultural raw materials, the feed resources of the chemical industry and also various premixes and feed products of the microbiological industry.

The sphere of field feed production satisfies 80-82 percent of the raw material requirements of the mixed feed industry. Other ingredients required for the preparation of mixed feed are furnished by the remaining departments of the APK [agro-industrial complex]. During the past 14 years, a considerable increase has taken place in the production of mixed feed in the state and cooperative sectors and this has made it possible to increase their proportion in the amount of concentrates consumed to 42 percent, or two times more than the figure for 1965. The state mixed feed industry has at its disposal capabilities for producing more than 50 million tons of mixed feed annually and the cooperative industry -- approximately 30 million tons.

The plans call for the production of mixed feed at state enterprises to be raised to 72 million tons, protein-vitamin additives -- to 5 million tons and premixes -- to 385,000 tons.

The construction of cooperative mixed feed plants has been launched on an extensive scale. In 1979, according to incomplete data, there were 3,340 plants in operation in the RSFSR and in the Ukrainian, Belorussian and Moldavian SSR's, 800 of which were interenterprise plants. The greatest number of interenterprise mixed feed plants are found in the Ukraine, where there are approximately 400 and on farms -- roughly only 100 plants. Whereas only interenterprise plants are in operation in the Moldavian SSR, in the RSFSR only 334 of 2,776 plans are of an interenterprise nature.

Experience has shown that capabilities are utilized most completely at interenterprise facilities. In the oblasts and autonomous republics of the RSFSR, interenterprise plants are found most extensively in Voronezhskaya and Penzenskaya oblasts, Mari ASSR, Chuvash ASSR, Kurganskaya Oblast and in Krasnodarskiy Kray.

For the most part, the interenterprise plants are obligated to provide mixed feed for farms located at some distances from railroads. Moreover, 50 percent of these plants are subordinate to livestock complexes and are located within their territories. Quite often, these plants produce different types of protein-vitamin additives and supply mixed feed to participating farms. Thus, at the Timashevsk plant in Krasnodarskiy Kray, which is capable of producing 105 tons of mixed feed per shift, 69,000 tons were produced during 1978. The plant has a shop for producing grass meal. In the immediate vicinity there is a plant which produces meat-and-bone meal sufficient for satisfying the requirements of the mixed feed plant. The available transport vehicles, consisting of 30 specialized ESK-10 motor vehicles, are used for delivering mixed feed to the farms and from the farms -- grain for the plant.

In 19 rayons of L'vovskaya Oblast in the Ukrainian SSR, there are interenterprise mixed feed plants which produce 0.5 million tons of mixed feed annually. Storehouse facilities for 273,000 tons have been built at the plants for storing the grain and mixed feed. The plants are making extensive use of the waste products of the food industry. Thus the Zolochev Interenterprise Plant has a meat-and-bone meal shop which produces 600-700 tons annually. The specialized shops of other plants are producing dry nutrient yeasts from malt residue. The production of premixes has been organized at four plants, with the output being sufficient for satisfying the requirements of all interfarm enterprises in the oblast.

However, full use is not being made of the existing capabilities at cooperative mixed feed plants, especially on farms in the RSFSR -- they are being employed only to roughly 45-55 percent.

In order to achieve more complete utilization of the capabilities of existing plants, it is necessary to ensure that they are supplied in a planned manner with protein-vitamin additives and to organize the technical servicing of equipment by organizations of Goskomsel'khoztekhnika. The interenterprise hydrolytic yeast plants must be tasked with ensuring that Glavmikrobioprom is supplied with those raw materials and items of equipment which are in short supply.

The successful operation of mixed feed plants in the state and cooperative sectors ideally requires a coordinated plan for their distribution. Two indicators are acceptable as the principal criteria for the placement of state plants: the availability of raw materials in the zone of the plant per ton of capability, taking into account the rational delivery radius, the capability of the enterprises in tons per nominal head of cattle.

Two such principal indicators must be taken into account in connection with the placement of interenterprise mixed feed plants: the distance from a railroad and a state mixed feed plant and the availability in the region of grain raw materials, in volumes which are no less than that required for a single shift of plant operation.

A strong reserve for industrial feed production is that of complete use of the waste products of those branches of industry which process agricultural raw materials. According to our estimates, such waste products in our country annually amount to roughly 28-30 million tons of feed units, containing 3-3.5 million tons of protein. The RSFSR provides a fine example of the extent of these waste products (see Table 2).

Table 2

Waste Products of Branches of the Processing Industry in the RSFSR
(in thousands of tons)

Types of Waste Products	1970	1976	1980 (estimate)
Cake and oil-seed meal	1,195	1,345	1,550
Dairy	1,052	1,190	1,730
Wast products from processing of grain	6,200	7,300	7,900
Fish	1,856	2,039	2,346
Food	3,610	4,200	4,560
Brewery mash	8,231	11,410	13,120
Beet pulp residue	11,600	14,800	17,600
Brewing waste and others	532	945	1,130

Even if we exclude those volumes of waste products which are used at fattening farms or at plants of the sugar and alcohol industry, then no less than one half of all waste products still remain unused (with the exception of grain waste products). As a result, the mixed feed industry has in recent years been supplied with 80 percent of the cake and oil-seed meal, 47 percent of the fish meal, 40 percent of the meat-and-bone meal and 17 percent of the dry skim milk.

A considerable portion of the waste products is lost, burned up or discarded into sewerage systems. A requirement exists for creating special feed shops for performing in an efficient manner at all enterprises of an industrial branch engaged in the processing of agricultural raw materials. The time has come to forbid the destruction of waste products and to consider the fulfillment of a plan for preparing feed from waste products as being on a par with the principal output of each enterprise of all branches of industry engaged in the processing of agricultural raw materials.

At the present time, the protein requirements of animal husbandry are being satisfied mainly by feed produced on the farms. And only roughly 10-15

percent comes in the form of various additives and the waste products of industry engaged in the processing of raw materials.

An increase is taking place at the present time in the disruption that has occurred in the rates of growth for the volumes of feed consumed in animal husbandry and for the protein contained in the feed, owing to a noticeable reduction in the plantings of pulse crops. Thus, whereas the areas used for perennial grasses (alfalfa, clover) increased from 13.4 million hectares in 1965 to 25-25.6 million hectares during the 1975-1979 period, the pulse crops (peas, soybeans, lupine) were reduced in area from 6.8 to 5 million hectares, or by 33 percent. No success was achieved in obtaining protein-balanced feed by almost doubling the plantings of perennial grasses, while reducing the pulse crops by one third. This exerted a noticeable effect not only on the protein available in the feed rations of the animals but also on the protein raw material requirements of the state and cooperative mixed feed industry, for the production of full-value mixed and protein-vitamin additives. The state mixed feed industry, experiencing a sharp deficiency of pulse crops, lowered noticeably the quality of the mixed feeds and BVD [belkovo-vitaminnaya dobavka; protein-vitamin additive] during the past 2 years, especially for poultry raising. Many poultry factories are carrying out additional work on mixed feed obtained from plants; they are expending 7-10 additional rubles per ton of mixed feed. One urgent task is that of increasing the production of pulse crops by roughly doubling the size of the plantings, while simultaneously raising the cropping power and increasing the proportion of pulse crops in the grain crop structure to 6-8 percent instead of 2.5-3.5 percent at the present time.

The decree adopted in 1979 on raising the procurement prices for peas will stimulate an increase in the productivity of peas. The experience of many kolkhozes and sovkhozes in the Tatar ASSR and in Gor'kovskaya, Ivanovskaya and other oblasts, where peas occupy 8-10 percent of the grain crop structure, reveals that protein-balanced feed is reliably ensured at these farms.

Experience has shown that the pulse crop areas should be expanded mainly in those regions where their cropping power surpasses other grain crops or is close to them. These are the economic regions of the RSFSR, north Caucasus, central chernozem zone, Volga region, the Urals region, west Siberian region, Kazakh SSR, Ukrainian SSR and others. On farms in the Belorussian SSR, the Baltic region and the non-chernozem zone, the plantings of peas in pure form tend to perish at times. Here it is advisable, based upon the experience of leading farms, to plant the peas in a mixture with barley or oats. If peas constitute 20 percent of a mixture, the protein yield, according to data furnished by experimental stations increases by 1.2-1.3 times.

Great losses in protein are sustained during the transporting of mixed feeds, since 1-1.2 percent of the nutrients are lost during 1 day of shipment time. Indeed, mixed feed is very often transported by rail over distances

of several hundreds of kilometers and thereafter -- by motor transport to the farms, with the transport operations spanning many days.

The need for reducing the delivery radius for mixed feeds has confronted the USSR Ministry of Procurements, the USSR Ministry of Agriculture and their scientific institutes with the task of accelerating a solution for the problem of improving the raw material zones of plants and ensuring the proper placement of the capabilities of plants, while taking into account the locations of the consumers. In this regard, there is also the problem of plant specialization in the production of mixed feed by type of animal and assigning such plants to definite poultry factories, large-scale livestock complexes and farms. In addition to eliminating protein losses during transport operations, this will also serve to raise the quality of the mixed feed as a result of greater mutual control on the part of both the producers and consumers.

Work is being carried out in a number of rayons, krays and oblasts aimed at developing objective inter-branch contacts among departments and organizations engaged in the production of feed. For example, appropriate subunits have been created in Krasnodarskiy Kray at the kray and oblast executive committee levels. These subunits include representatives from the feed production departments and organizations. A requirement now exists for having a single system of inter-branch contacts in the form of councils from top to bottom.

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ACCELERATION IN DEVELOPMENT OF UZBEKISTAN ANIMAL HUSBANDRY

Tashkent SEL'SKOYE KHOZYAYSTVO UZBEKISTANA in Russian No 6, Jun 80 pp 2-5

[Article by A. Yuldashev, deputy head of the Department of Agriculture under the Central Committee of the Uzbekistan Communist Party]

[Text] As they implement the decisions of the 25th CPSU Congress, the workers of Uzbekistan are coming to the end of the 10th Five-Year Program with confidence.

The past years of this five-year plan were a period of intensive labor and new achievements in implementing the agrarian policy of the party.

The 4-year plan for gross agricultural production in this republic was fulfilled by 102.2%, exceeding by 23.6% the level under the 9th Five-Year Plan. Tasks have been fulfilled and overfulfilled with regard to procurement of all forms of agricultural and livestock products. The following figures refer to sales to the state: 22.3 million tons of cotton, 4 million tons of grain, 10.7 million tons of fruit and vegetables, 110,800 tons of cocoons, 888,000 tons of meat, 2,446,000 tons of milk, 2 billion 950 million eggs and many other products.

Much work was done to follow the instructions of comrade L. I. Brezhnev, general secretary of the CC CPSU and chairman of the presidium of the USSR Supreme Soviet, to better meet the demands of the public for livestock products dervied from production thereof in this republic.

Party organizations of this republic are always concentrating on questions of development of animal husbandry; specific measures have been elaborated in all areas and are being implemented for the speedy advancement of this sector. As a result, in the 4 years of the 10th Five-Year Plan, the mean annual production of meat at kolkhozes, sovkhozes and other state farms increased by 30%, that of milk increased by 43% and eggs by 69%, as compared to the 9th Five-Year Plan. The quantity of livestock and fowl has grown, and their productivity has increased. In this ti[illegible] mean milk yield per cow increased by 449 kg, constituting 2361 kg in [illegible]9; mean weight of cattle delivered to the state reached 375 kg; layer hen

productivity was 159 eggs. Procurement of livestock and fowl increased by 31%, that of milk increased by 43% and eggs by 72%.

However, the attained level of livestock production does not meet the increasing demands of this republic's population.

In order to meet this goal and attributing importance to continued development of animal husbandry in our republic, the CC CPSU and USSR Council of Ministers adopted a special decision dealing with steps to accelerate development of the livestock industry in Uzbek SSR. It stresses the following points: among the most important tasks for the party, soviet and agricultural bodies of Uzbek SSR, in addition to development of cotton growing, are implementation of rapid rate of growth of the animal industry, comprehensive intensification thereof by creating a stable feed base, fuller use of production resources at kolkhozes, sovkhozes and other agricultural enterprises, introduction of achievements of science, technology and progressive knowhow.

The decree adopted by the CC CPSU and government of the USSR is a historic document, and it marks a new and vivid expression of the enormous concern of the party and state about the welfare of the Soviet people and continued flourishing of our republic.

In accordance with the tasks ensuing from the above-mentioned decree, the 14th and 16th plenums of the CC of the Uzbekistan Communist Party elaborated a concrete plan of actions for continued development of the livestock industry under the 11th Five-Year Plan. Along with consistent growth in gross harvests of cotton, grain, fruit, vegetables and other agricultural products, it requires that meat production in all categories of farms be increased to 740,000 tons of live weight, or a 48% increase over 1978, milk increase to 2,900,000 tons, i.e., by 45%, and eggs to 2.680 billion, which is double the achieved level.

For the practical implementation of the outlined measures, there are plans for construction and expansion in 1981-1985 of livestock complexes engaged in raising and fattening cattle to an overall capacity of 110,000 head, with the following targets for other sectors: 594,000 head of pigs; 1600 head of sows in newly opened pedigreed swine-breeding farms, 8.2 head of fowl at poultry plants raising them for meat, 3.3 million layer hens at those raising them for eggs, 2.1 pedigreed poultry-breeding farms, 50,000 head at pedigreed poultry plants and 67,400 head of cows in dairy complexes.

A total of 1,100 rubles of state capital investment was allocated for the construction of all these projects. This is as much as was invested in the livestock industry in the last 20 years.

Large allocations are being made for the construction of enterprises in the mixed feed industry and remodeling existing ones.

There are plans to develop [reclaim] in 1981-1985 500,000 hectares of new land for agricultural purposes. This will improve the structure of sowing areas, implement completely cotton and alfalfa crop rotation, and will increase drastically feed production on irrigated land.

The decisions of the 14th plenum of the CC of the Uzbekistan Communist Party pertaining to the tasks for this republic's party organization to implement the decree adopted by the CC CPSU and USSR Council of Ministers "On Measures for Accelerated Development of the Livestock Industry in Uzbek SSR" constitute a concrete program of action for all party organizations, soviet, trade union and Komsomol agencies to implement accelerated advancement of animal husbandry; they have been discussed extensively at plenums of all party obkoms and raykoms, approved by all agencies as a guide to be executed.

The outlined program is a large one. For successful fulfillment thereof, we must develop all sectors of the livestock industry to the utmost, put into action all unused resources in all categories of farms in this republic, introduce into practice advanced zootechnical procedures and the most progressive production technology.

In order to increase meat production, it is necessary, first of all, to increase the stock of cattle and fowl. The plans call for the following quantities of livestock in all categories of farms by the end of 1985: 3,570,000 head of cattle, including 1,525,000 cows, 687,000 pigs, 10 million sheep and goats, 19 million layer hens. This is 10.6%, 22%, 86%, 23% and 3.2 times more, respectively, than in 1978.

In addition to increasing the livestock population, it is necessary to increase significantly the productivity of animals. The advanced farms are already producing 110-120 kg beef per "structural" [?] head of cattle per year, which is 1.5-2 times more than in most farms of this republic. All of the management and zootechnical work at kolkhozes, sovkhozes, interfarm livestock fattening enterprises and state livestock complexes should direct themselves toward increasing beef productivity of cattle and bringing it up to the level at the best farms. It is imperative to organize in all areas intensive raising and fattening of all livestock to be used for meat, so that the delivered cattle would have a live weight of at least 420-450 kg. At the same time, one should speed up construction of livestock complexes and make the change to industrial methods of raising and fattening cattle.

Some work has been done in the republic in this direction, and some positive results obtained. Still, a significant part of the livestock is still being raised by the extensive method, which prolongs the fattening up period, causes excessive outlay of feed and meat shortfall. Estimates have shown that if the mean delivered weight of animals were only raised to 420-450 kg, up to 20,000 tons of meat would be additionally obtained per year. There is much organizational work to be done to perform this

important task by local party, soviet and agricultural bodies, administrators and farm specialists, as well as all farm workers.

Dairy cattle raising must develop at an accelerated pace. By the end of 1985, the plans call for increasing milk production in this republic to levels that would permit increasing consumption thereof to 200 kg per capita, and up to 242 kg per year in urban areas. To achieve this, it is imperative to raise the number of cows at kolkhozes and goskhozes to 600,000 head and increase the mean milk yield to 3000 kg, and up to 4000 kg in suburban areas.

A considerable amount of work has been done in this republic to improve the livestock breeds. At the present time, about 98% of the cows at kolkhozes and sovkhozes are thoroughbreds and upgraded animals. However, the share of highly productive purebred cows is only 18%. It is necessary, first of all, to organize selective breeding of heifers in specialized state and interfarm complexes for speedy replacement of stock with low productivity. Such complexes should be organized in each region so that the needs of farms are fully met. By the end of the 11th Five-Year Plan, it is proposed that 250,000-300,000 head per year of replacement heifers be raised. The time is ripe to change to selective breeding of highly productive primipara cows. Only this will permit stocking dairy complexes with valuable animals, with guaranteed productivity, and better use thereof.

The decisions of the 14th plenum spelled out the large task of developing swine and poultry farming. Under the 11th Five-Year Plan, pork and poultry production is to be increased by 5.5 times. By the end of 1985, there will be 19 swine-raising complexes with a total of 892,000 head in this republic. If this capacity is reached, they will produce 110,000 tons of pork (live weight). By the end of the 11th Five-Year Plan, poultry production is to be raised to 112,000 tons (dressed weight) and egg production to 2680 million eggs.

To succeed in these tasks, there must be a radical improvement in the work of Uzptitseprom and Uzglavzagotzhivprom [Uzbek Poultry Industry and Uzbek Main Administration for Poultry Procurement]. In accordance with the planned rate of development of swine and poultry farming, particularly broilers, it is imperative to establish as quickly as possible our own pedigreed stock farming base, to develop and introduce an orderly system of pedigreed stock farming work. For this purpose, there must be advance construction of pedigreed stock farms and pedigreed stock breeding facilities.

Sheep raising, based on the use of vast desert, semidesert, foothill and mountain pasture land, occupies a special place in this republic's livestock industry. In recent years, considerable work was done with regard to specialization and concentration of karakul sheep breeding, and about 95% of the sheep are concentrated in specialized sovkhozes. There has been

an improvement at these farms of supply of machinery and transportation; there is greater mechanization of feed procurement, water supply and primary processing of karakul fur. Specialized enterprises have been organized in many regions for fattening sheep and producing Persian lamb skins on an industrial basis. By 1985, Persian lamb production is to be raised to 310,000 skins, and the mean delivered weight of sheep is to be raised to 50 kg.

The advances we have made are rewarding, but today it is imperative to concentrate specially on increasing productivity of karakul sheep in the direction of increasing the yield of top-grade Astrakhan lambskins, especially for jackets, raising the indicators of herd reproduction, preservation and increase in stock. The main point here is the establishment of a firm feed base and deeper pedigreed breeding work. In view of the high effectiveness of radical improvement of natural feed resources, it is imperative to make broader use of such procedures at karakul sheep farms and increase work on creating protective pasture belts and perennial cultivated pastures. In this regard, the CC of the Uzbekistan Communist Party and Uzbek Council of Ministers adopted relevant decisions in 1977-1978. All resources must be used to fully implement the major measures outlined in them.

Development of sheep raising for mutton-wool and mutton-lard purposes, as well as goat farming for wool and fur, requires serious attention also.

There are major tasks in store to develop horse and camel breeding. Intensification of the former sector is also needed because of the wide development of riding, interest in which is growing in all areas.

It is imperative to accelerate completion of specialization and concentration of horse and camel breeding. By the end of the 11th Five-Year Plan, it is projected that there should be 120,000 head of horses in this republic's kolkhozes and sovkhozes, 20,000 head of camels, 3,400 tons of horse meat, up to 2200 tons of kumys [beverage from mare's milk] and 1050 quintals of camel hair.

There must be continued development of rabbit breeding, bee keeping and pond fishing.

The workers of the consumer cooperative and state trade of this republic, as well as ancillary farms of industrial enterprises, construction, transportation and other organizations will make an important contribution to the increase in production of meat and other products of the livestock industry.

Personal subsidiary plots of kolkhoz farmers, blue and white collar workers merit the closest scrutiny, since they are among the most important sources for replenishing the stock of foodstuffs. Every assistance should be given so that each rural family would take fuller advantage of plots near

their homes, raise fowl, pigs and rabbits, and so that as many residents as possible would have cows, sheep and goats. The kolkhozes and sovkhozes should help the public acquire young animals, feed and supplies to build ancillary buildings, assign pastures and hayage for personally raised cattle and sell grain and forage to farm workers as payment for labor.

Development of the livestock industry can only be effective if a solid feed base is created. Some work has been done in this direction in our republic: the area covered by feed crops has been increased, constituting 676,000 ha in 1979; productivity has increased, while overall feed production increased by 1.3 times in the past 4 years of the current five-year plan. However, the attained level of development of the feed base does not yet meet the demands of the growing livestock industry. There are many untapped resources. The harvest of forage crops is still small in some farms and regions; they are slow in adopting effective technology for feed procurement, storage and processing.

There are still many complex problems ahead of us, and the main directions have been defined for solving them. It is necessary to organize in all areas cultivation of a more intensive type of feed crops, as well as to expand areas of irrigation, improve seed growing, increase feed productivity of pastureland, expedite completion of the change of feed production and feed processing to an industrial footing. There must be broader introduction of the system of intervening, late-summer and repeated planing of feed crops, which was developed at the advanced farms and yields more than 20,000 feed units per irrigated hectare.

The immediate objective is to obtain at least 200 quintals of alfalfa hay per hectare of irrigated land 100 or more quintals of corn grain, 450-500 q of silage and 500-600 q of root crops. Important measures will have to be taken in each farm in order to increase gross feed production by 1.5-1.6 times in 1985, as compared to 1978. At the present time, the party organization of this republic, scientists, kolkhoz and sovkhoz specialists, and all rural workers are concentrating on the performance of these tasks.

To develop livestock farming on an industrial footing, a modern feed production industry must be created. At the present time, there are 23 mixed feed plants in this republic, and last year they produced about 1.5 million tons of feed. Mixed feed production will be raised to 2.1-2.2 million tons by the end of the 11th Five-Year Plan.

The veterinary service plays a significant role in performing the tasks spelled out by the party and state for accelerated development of the livestock industry. In the presence of large livestock complexes, it is particularly important to eradicate infectious diseases, rid animals of tuberculosis and brucellosis, organize measures for the prevention of noninfectious diseases, for prevention of deaths and sterility of female stock. Farm administrators and zooveterinarian workers must eradicate

poor management, which is still encountered, as well as infractions of zoohygienic standards for animal upkeep and feeding, and improve the quality of management in this sector.

To implement this program, the qualifications of livestock breeders must be advanced, they must learn new occupations; there must be a significant increase and improvement of training for personnel in the mass occupations. For this purpose, it is planned to radically revise the system of personnel training at schools of advanced knowhow, specialized training course and vocational technical schools. The Uzbek Ministry of Agriculture, Uzbek State Commission for Agricultural Equipment, Uzped Fruit and Vegetable Industry, Main Central Asian Administration for Sovkhoz Construction and their agencies in outlying areas, local party, soviet and Komsomol organizations must undertake in earnest the training, retraining and advanced training of administrative personnel, specialists, brigade leaders and workers in the mass occupations so that the needs for such personnel will be filled completely for complexes and poultry plants that are being built constantly.

Farm and field workers of our republic are faced with major tasks this year. This year not only is the last one under the 10th Five-Year Plan, it is also the foundation on which the next five-year plan is constructed. This is the year of the 110th anniversary of the birthday of V. I. Lenin, the year of preparation for the 26th CPSU Congress, which will open up new horizons in the building of communism.

The participants at the general meeting of this republic, aware of the foregoing, have appealed to all field and farm workers in the republic to deploy a broad socialist competition and they have assumed new, greater obligations.

In 1980, the farm workers of Uzbekistan decided to produce 288,000 tons of meat, 860,000 tons of milk, 995 million eggs and 16,000 tons of wool at kolkhozes, goskhozes and interfarm enterprises. The stock of cattle in the public sector is to be increased to 1,600,000 head, including 448,000 cows, 458,000 pigs, 6.5 million head of sheep and goats, 9.5 million adult fowl, including 7.1 million layers. The production growth will result in increased productivity of livestock and fowl. In 1980, it is projected that an average of 2450 kg milk per fodder-fed cow will be obtained, 165 eggs per layer, mean delivered weight of cattle will be brought up to 380 kg, that of pigs up to 110 kg and sheep up to 45 kg.

There are major measures pl[illegible] in feed production.

At the present time, speci[illegible]measures have been developed and are being implemented in all oblasts, rayons and farms to increase livestock products by 20-25%, increase the stock of cattle and strengthen the feed base. This will become an important contribution to implementation of the decisions of the 14th and 16th plenums of the CC of the Uzbek Communist Party.

Comrade Sh. R. Rashidov, candidate for membership in the Politburo of the CC CPSU and first secretary of the CC of the Uzbek Communist Party, stated in a report to the 14th plenum of the CC of the Uzbek Communist Party: "The enormous assistance given by the government, creation of all necessary conditions for increasing drastically the production of meat, milk, eggs and other livestock products compels us to direct the efforts of all party, soviet, trade union and Komsomol organizations, agricultural and procurement bodies, all ministries and agencies of this republic toward practical implementation of tasks related to further growth of the livestock industry. No one must remain on the sidelines of this important cause."

Today, this is the main concern of this republic's party organization, and this is the principal assurance of successful implementation of the program for accelerated development of the livestock industry.
[474-10,657]

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CSO: 1824

USE OF SATELLITES IN LAND CARE PROGRAM DISCUSSED

Tselinograd FREUNDSCHAFT in German 2 Aug 80 p 4

[Report by Andrey Kapitsa, corresponding member, USSR Academy of Sciences: "The Universe Serves Agriculture"]

[Text] The bases of USSR land legislation call for the thorough exploration of the country's natural resources, for the organization of their most efficient utilization and for the care of the land. The accomplishment of these tasks calls for a great deal of data which may be obtained by the study of photographs taken in space. By such studies it was possible, for example, to prepare a schedule for land use and environmental control on the Mangyshlak Peninsula. It was found that, within the borders of the explored region, we have available a total land surface of 2,000 square km, which promises the availability of sweet groundwater at shallow depths.

The useable reserves of sweet water were assessed at about 35,000-40,000 million cubic meters.

It is well known that distant pastures dominate land use in the eastern Kaspi region. The pastures in the region are not very productive, and the damage to the soil and plant cover caused by human activities has further lowered their value. As a result of the schedule prepared as per the space photographs it was possible to determine the sequences and the content of the measures for the protection and restoration of the pastures.

Also thanks to the space photographs cases of secondary soil salination were discovered, which were a consequence of damage to the groundwater regime in the Central Asian regions with large reservoirs. This is most important for the preparation of recommendations for soil conservation.

We are all aware that some 17 percent of the arable land in our country suffers from wind and water erosion which causes a diminution of the yields of farm crops. Space photographs have made it possible to ascertain the incidence, nature and speed of the erosion processes. Such data enable us to adopt purposeful anti-erosion measures and rationally to distribute the relevant investment resources.

The satellites for the observation of the earth surface are flying laboratories, equipped with cameras and television systems, radar and laser devices. Their use has made it possible to ascertain the intensity of the earth surface's own and reflected radiation in the visible and infrared band of the spectrum as well as in the radio waveband. Overall we can thus "see" everything the human eye may observe and a great deal of that which goes beyond the powers of the human eye. The photographs, for example, taken in the infrared band allow us accurately to see the foci of crop disease or pest damage. At a certain stage of development it is also possible to distinguish between normal seeds and those weakened by drought. Observations of the earth surface from space within the radio waveband may be carried out by day and night They furnish exhaustive data on soil moisture, for example. These are only a few of the questions which a modern Sputnik may answer.

The most widely known device to obtain data about the earth surface from space is the photo camera developed by scientists in the USSR and GDR. It enables us to get pictures of the earth from space in six bands of the spectrum with the consequent possibility to synthesize from any four negative color photographs capable of providing details within 15 meters on the earth surface. However, the photo camera normally supplies data only several weeks after the picture was taken and therefore cannot be used for the accomplishment of immediate tasks.

To ascertain day-to-day data it is possible to use so-called scanners which send the picture to earth by means of a radio channel. A scanner installed on Sputnik Meteor-Priroda reflects the image of the earth surface at four bands of the spectrum. At the same time it allows us to distinguish details with linear dimensions of 200-250 meters. Such Sputniks enable us to assess the status of the ice cover, to see the limits of the snow and appraise the intensity of flood waters of major and medium rivers as well as the extent of the flooded areas. The images from space clearly show the center of fires and the dimensions of forest fires. This allows the forestry services to adopt the necessary operational measures.

A system of several Sputniks equipped with scanners ensures the survey of one and the same section of the earth surface at several days intervals. It is thus feasible to determine the speed of change in natural objects, such as the stages of seed development, the biomass and density of the seeds, as well as ascertain other data necessary to direct farm production.

By using the observations from various bands of the spectrum we are able to obtain data on crop diseases 10-12 days earlier than by traditional methods. Such diseases may then be quickly dealt with by aerial spraying. The economic importance of such work is tremendous because diseases and agricultural pests annually destroy a significant portion of the harvest in the various regions of our country.

It is quite possible to obtain different data in different periods of the farming year. In the fall and spring the land is photographed and the areas

sown to winter crops determined, their status appraised, the moisture content of the soil ascertained and the quality of the seeds checked. In late spring and summer the growth and ripening of farm crops is checked, the harvest strategy prepared. In the summer months it is of the utmost importance in good time to trace fields affected by disease, infested by weeds or damaged by dust storms.

The efficacy and importance of space data largely depends on the speed of data processing, their issue in the shape of card indices dealing with the various topics of interest, quantitative and qualitative appraisals and their conveyance to the various farm enterprises. Eventually our scientists will have to transfer data processing to the Sputniks themselves, so that it will be possible to send already processed data back to earth.

The dimension of the areas explored from space, the possibility of obtaining qualitatively new and multizonal data, the regularity and speed of data collection--all these advantages have already made space data vital for the accomplishment of many tasks of farm production.

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PRODUCTION, AGRICULTURAL MANAGEMENT IN NONCHERNOZEM ZONE RSFSR

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 6, Jun 80 pp 118-120

[Article by V. Tkachenko, candidate of economic sciences, Leningrad]

[Text] An enlarged session-conference of the department for the RSFSR Nonchernozem Zone of the All-Union Academy of Agricultural Sciences imeni V. I. Lenin and of the Leningrad Oblast Board for scientific organization of agricultural labor convened in Leningrad on 27-29 February 1980. There was discussion of the main directions of development of specialization and concentration of production, as well as improvement of agricultural management in the Nonchernozem Zone of RSFSR.

Scientists, party, soviet and agricultural agency workers, administrators and specialists from a number of kolkhozes, sovkhozes, interfarm enterprises, industrial and agrarian-industrial associations from 29 autonomous republics and oblasts of the Nonchernozem Zone of RSFSR and other republics of our country participated in the work.

The following individuals delivered papers at the plenary session: Academician V. M. KRYAZHKOV, chairman of the presidium of the VASKhNIL [All-Union Academy of Agricultural Sciences imeni Lenin] department for the RSFSR Nonchernozem Zone; V. A. GORYASHIN, candidate of agricultural sciences, deputy chairman of the Leningrad Oblast Executive Committee of the Council of People's Deputees; V. V. MILOSERDOV, corresponding member of VASKhNIL, director of NIIEOSKhP [Scientific Research Institute of Economics and Organization of Agricultural Production ?] in the RSFSR Nonchernozem Zone; Yu. T. BUZILOV, corresponding member of ASKhNIL, director of VNIIETUSKh [All-Union Scientific Research Institute of Economics, Technology and Management of Agriculture ?]; V. A. SOKOLOV, head of the department of agriculture and procurement of the RSFSR Gosplan; G. M. LOZA, academician of VASKhNIL; and V. N. PUSTOZEROV, deputy minister of RSFSR agriculture.

A total of 48 papers was delivered at the plenary and section meetings of this session-conference. A draft of recommendations to upgrade planning, management and cost accounting in new organizations was submitted for discussion and essentially approved by the participants. It also contains the results of scientific research and summarizes the experience gained in developing agriculture in the Nonchernozem Zone of the RSFSR at this stage; the main directions were defined for development of specialization and concentration in the livestock industry, feed production, vegetable, potato and flax growing, and other sectors of agriculture.

A high concentration of population is inherent in the RSFSR Nonchernozem Zone: three-quarters of the inhabitants live in cities. For this reason, farming in this zone is specialized primarily in production of vegetables, potatoes, milk, eggs and meat.

Large specialized enterprises, combines, complexes and industrial associations have been established in virtually every autonomous republic and oblast of this zone, and their economic and technological features conform with the industrial standards for development of agriculture. According to the data of the RSFSR Ministry of Agriculture, there were 2782 interfarm enterprises, organizations and associations in the Nonchernozem Zone of RSFSR in 1979. This number included enterprises and associations established both on the basis of contracts and share contributions. About 1400 of them, or 51%, are directly involved in agricultural production.

Of the total number of interfarm enterprises and farms performing the functions of interfarm enterprises, 46.5% are engaged in raising and fattening cattle. But less than 15% of the increment [weight gain] obtained in the zone is referable to them. The most progressive form of organizing production and management there among all cooperative production systems are the industrial [production] associations, whose number is constantly growing in this zone.

Specialization and cooperation are being developed, not only in the area of raising and fattening cattle, but in dairy cattle farming, hog farming and seed growing referable to cultivated crops, and particularly in such an important sector as feed production. In 1979, there were 97 interfarm enterprises and shops for the production of mixed feed and feed supplements. Organization of such enterprises will help convert feed production into a well-developed commodity sector.

The farms in the RSFSR Nonchernozem Zone emerge as initiators of formation of different types of interfarm enterprises and agrarian-industrial production associations. In particular, there are interfarm enterprises and associations for the use of reclaimed and tidal land, and production of feed on it, in Kaluzhskaya, Tul'skaya, Gor'kovskaya, Bryanskaya and Vladimirskaya oblasts. In Mariyskaya ASSR, an agrarian-industrial production association was founded for the production and processing of the products at the Mariy El Romanovskiy Sheep Farm.

In the last few years, cooperation began to develop in this zone in the area of servicing agriculture: agrochemical, repair and operation of equipment, technical servicing of livestock farms, reclamation, mechanization, electrification, etc.

The industrial associations of the Nonchernozem Zone constitute over 60% of the total number thereof in RSFSR. The associations contain more than 200 specialized farms. Many of them have not only achieved high production indicators (Novyy Svet, Leto, Pobeda, Detskosel'skoye, Leningrad Oblast, Vesna, Moscow Oblast, Yasnaya Polyana, Tul'skaya Oblast and others), but are pursuing an intensive search, together with scientists, for the means of upgrading economic management and administration.

Among the causes delaying development of interfarm cooperation and agroindustrial integration in the RSFSR Nonchernozem Zone, lack of the following was mentioned at this session-conference: scientific recommendations for in-depth specialization and concentration with the use of industrial methods of agriculture, promising forms of cooperation, optimum size of complexes and enterprises, within associations and interfarm associations, mutually advantageous economic relations of kolkhozes and sovkhozes with interfarm enterprises, and their relations within associations, as well as with specialized systems under other agencies; practice of technical and economic planning of interfarm and industrial associations; rational proposals to upgrade planning of production and purchasing of agricultural products in the presence of in-depth specialization and procedures for implementing this down to the primary production departments; research on problems of specialization, concentration, cooperation, organization of production, management and economic interrelations in the process of cooperation of different farms and enterprises, etc.

It was noted at the session-conference that it is imperative to develop more broadely agroindustrial integration, i.e., organic combination of agricultural production with industrial processing of its product. To date, there are 22 agroindustrial enterprises and 3 agroindustrial production associations in this zone. Institutes are conducting research and practical work to organize agroindustrial production associations within different rayons and oblasts of the Nonchernozem Zone. However, this process is still slow. There are no scientific recommendations pertaining to the basic principles of founding such associations and organizing management thereof. Lack of communication between agencies and inadequate development of resources for processing of agricultural products hinder this objective.

The papers and speeches delivered by participants at this session-conference contained suggestions for development of scientific research and implementation of practical measures directed toward eliminating the causes hindering deeper specialization and concentration, expanded cooperation and agroindustrial integration, refinement of organization of management in cooperative production systems of this zone.

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STRENGTHENING TIES BETWEEN AGRICULTURE, AGROINDUSTRIAL COMPLEX

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 4, Apr 80 pp 28-34

[Article by Aleksandr Ivanovich Panchenko, doctor of economic sciences, head of the sector for general analysis and optimization of intersectorial ties of the VNIESKh [All-Union Scientific Research Institute of Economics of Agriculture], and Valeriy Aleksandrovich Klyukach, candidate of economic sciences, head of the sector for improvement of interrelations between agriculture and area of activity dealing with processing and sales of VNIESKh]

[Text] The principles representing the creative development of Leninist agrarian policies are described in the decisions of the March (1965) and subsequent plenums of the CC CPSU, as well as 23rd, 24th and 25th Party Congresses, and a long-term complex program was elaborated for continued comprehensive development of agriculture.

Modern agrarian policy refers to Leninist strategy and party tactics in management of agriculture and related sectors of industry under fully developed socialism.

The 25th CPSU Congress, having considered questions of continued development of sectors of the agroindustrial complex, set two main goals, which are of basic economic and political significance: to see to it that the nation is reliably supplied with foodstuffs and agricultural raw material, having for this purpose a sufficient reserve at all times, as well as to advance more and more on the road toward equalizing material and cultural standard of living in urban and rural areas, which is a stipulation in the party's program.

The speech of comrade L. I. Brezhnev at the July (1978) plenum of the CC CPSU provided a comprehensive and profoundly scientific analysis of economic and practical activities of the party with regard to development of socialist agriculture at the present stage. It was stressed that "implementation of stable, well-adjusted economic relations in agriculture, as well as between sectors of the agroindustrial complex plays a role of exceptional

importance"* in increasing agricultural production. In this regard, the problem of improving industrial and economic ties between agriculture and other sectors of the agroindustrial complex is a very pressing one.

Studies of this problem began in the late 1960's (M. Ya. Lemeshev, A. P. Bolotov, M. M. Makeyenko, A. I. Panchenko, V. A. Tikhonov, S. N. Singur and D. Z. Korovyakovskiy). However, the results do not yet warrant the statement that the problem has been solved either in the scientific or practical aspect. A complete solution would be possible only with scientific development and practical implementation of the economic mechanism of operation of the complex, as well as an adequate level of development of its productive forces.

The most essential feature of current development of agriculture is that there was objective formation in the past, ongoing formation and development of intersectorial production-technological systems of sectors, industries and organizations (intersectorial complexes) which implement social and production-economic goals of development of society. The formation of intersectorial complexes is the result of constantly increasing separation of labor and socialization of production, the scientific and technological revolution, which is generating new industries and sectors.

The agroindustrial complex is the most important of the intersectorial complexes, and its main function is to meet in full the demands of society with regard to foodstuffs, clothing and shoes. In addition, it is called upon to create the material conditions to eliminate substantial socioeconomic differences between urban and rural areas, to reduce the time spent on acquiring and preparing end products for consumption. The strategic points in the agrarian policy of the CPSU proceed objectively from this and orient planning agencies toward development of the entire agroindustrial complex as a means of solving the most important socioeconomic problems.

The agroindustrial complex appeared in our country already in the 19th century, while its development was deployed during the years of collectivization and industrialization. This complex underwent particularly intensive formation and development after the March (1965) plenum of the CC CPSU, which defined the main directions of modern agrarian policy of the party.

In his report to the 25th Party Congress, comrade L. I. Brezhnev stressed the need for balanced development of agriculture and the sectors that supply it with the means of production, as well as those dealing with procurement, transportation, storage and processing of agricultural products. He stated: "... Here we still often encounter a lack of coordination

*L. I. Brezhnev, "Continued Development of USSR Agriculture," report to the plenum of the CC CPSU, 3 July 1978. Decree adopted by the plenum of the CC CPSU on 4 July 1978, Moscow, Politizdat, 1978, p 29.

[separation] between agencies, miscalculations in planning, which cause considerable losses."

"Evidently, it is time to improve--and to seriously improve--production and economic cooperation between agriculture and the industrial sectors directly linked with it, to implement a single, national approach to development of the entire agroindustrial complex."*

A modern agroindustrial complex is a complicated and extremely large intersectorial technological-production system uniting almost 20 sectors of the national economy, which perform different functions. Thus, enterprises of the food and light industry and, in part, agriculture, are engaged in manufacturing the end products of the agroindustrial complex, while trade and public catering organizations are involved in the sale thereof. Production of the main forms of raw material for the end products and animal feed (source of livestock products) is concentrated in different sectors of agriculture, fishing, chemical, microbiological and mixed feed industries. The following enterprises are involved in material and technical support, technical maintenance of raw material and processing plants and sectors pertaining to sales: plants that produce equipment for public catering facilities, light and food industries, for storage and cooking of food in the home [refrigerators and stoves?]; for reclamation and rural construction; tractor, reclamation and agricultural machine building; production of mineral fertilizers and chemical agents to protect plants and animals against pests and diseases; for the production of containers, warehouse and refrigeration equipment, as well as refrigeration and warehouse management; specialized enterprises dealing with installation and repair of agricultural machinery, tractors, equipment and machines for all sectors of the complex; other enterprises that render services to agriculture (transportation, agrochemical and other forms of services); organizations in the system of procurement, system of material and technical supply and sales. The system of specialized education furnishes personnel. Combined and sectorial scientific research and technological-planning organizations search for, evaluate and select alternative directions of development of the complex and its subsystems. The system of party, state and public [voluntary] administration implements coordinated development of all elements of the complex, so that its goals are reached as speedily as possible with the allocated resources.

More than 25% of all capital investments assigned to the national economy has been allocated for the last few years to development of the agroindustrial complex. About 40% of all those involved in the national economy work in sectors of this complex. The fixed production capital of the agroindustrial complex constitutes almost one-third of such capital in the nation. The resultant indicators are equally impressive: the share of the complex product constitutes almost 40% of the overall national product; more than 80% of the nation's consumption fund is formed in this complex (according to material and physical composition).

*"Proceedings of 25th CPSU Congress," Moscow, Politizdat, 1976, p 53.

The formation and development of the agroindustrial complex, which herald a qualitatively new and higher level of development of productive forces in the agroindustrial area of the national economy, have resulted in a level of consumption of the most important foodstuffs and industrial products that could never have been achieved by agriculture without close contact with other sectors. In 1978, the per capita consumption figures were as follows: 57 kg meat, 321 kg milk, 230 eggs, 90 kg vegetables, 41 kg fruit, 33.7 square meters of fabric, 2.2 pieces of outer knitwear, 4.4 pieces of knit underwear and 3.2 pairs of leather shoes. The USSR is providing economic and scientific-technical assistance, including food, to developing countries.

The agroindustrial complex initially appears and asserts itself as a technological production system, i.e., a limited group of sectors, plants and organizations of the national economy that interact in the process of meeting the demands for foodstuffs, clothing and shoes. At a higher stage of its development, the process of gradual conversion into an economic-management system begins, i.e., formation of an integrated system of organized sectors, industries and organizations of the national economy that are united by a common goal and common program of development.

In the former case, formation of an agroindustrial complex characterizes a qualitatively new level of development of productive forces in the agroindustrial area of the national economy and in the latter, it characterizes a new level of socialization of production and labor, a new form of organization of industrial relations and national production as a whole.

Greater social separation of labor, deployment of the scientific and technological revolution, greater socialization of production, development of processes of agroindustrial integration on all levels of the economic hierarchy constitute the material basis for the formation of the technological-production and economic-management systems. The transformation of a technological-production system into an economic-management system occurs by means of formation of structural elements of the complex and modification of its economic-production ties.

The economic-production ties of the agroindustrial complex refer to the relations between elements within the complex and the environment in the process of production, distribution, exchange and consumption of foodstuffs, clothing, shoes and performing other functions. These ties implement interaction between elements of the complex, exchange of products, services, energy and information between them, and they unite (integrate) functionally related elements into an economic-management system. Economic-production ties are called upon to implement the normal operation and interaction of all structural elements; therefore, effective development of the complex is possible only if these ties are continuously active.

There are economic ties between management elements of the complex, between management elements and superior administrative bodies, between management elements and the state. Ties referable to exchange of products and services

are, at the same time, technological and industrial [production] ties, whereas ties referable to exchange of information represent administrative relations.

Agriculture has the best developed network of ties in the agroindustrial complex: most sectors of the complex delivery their products to it, render services or process its products. Of the total productive capital of agriculture, 80% consists of capital of industrial origin, while the share of material outlays of industry and other sectors is in excess of 60% of the total material expenditures for production. Agriculture is the core of the complex, since it is the starting point for the production of the end products of the complex and consumes the bulk of products and services of sectors of material and technical supply and technical-production maintenance.

Studies are in progress in the department of economic problems of intersectorial ties at the VNIESKh on problems of improving economic-production ties between agriculture and sectors of material and technical supply (tractor and agricultural machine building, mixed feed and microbiological industries, etc.), as well as the area of procurement, transportation, storage, processing and sale of agricultural products, sectors of technical services (material and technical supply, agrochemical, transportation and repair services). The results of these studies indicate that there is a significant reserve for upgrading intersectorial ties, improvement of economic and management-related conditions of collaboration among sectors of the agroindustrial complex. The problem of improving ties can be solved the most fully only if a management mechanism is created for operation of the complex that would conform with the present level of productive forces, and if a long-term special-purpose program for its development is set up.

The management mechanism of the agroindustrial complex refers to the aggregate of requirements of economic laws of socialism, ways and means, forms and methods of acting on its structural elements, administrative bodies and a certain type of organization of operation of all elements of the complex. The complex is put into action, its constant development is provided for in accordance with the goal put to it and organization of the performance of its functions are implemented through the management mechanism. This mechanism must meet three main requirements: implement total guidance of all elements of the complex toward its end national economic results; cooperate in formation and maintenance of optimum reproductive structure in accordance with the objectives of speedy achievement of the goal of the complex; see to it that the economic management structure of the complex conforms with the current level of development of productive forces.

The long-term special-purpose program of development of the complex should be so elaborated that implementation thereof would assure satisfaction of the needs of the public for foodstuffs, clothing and shoes in accordance with scientifically substantiated standards, and would create the material

conditions for overcoming the substantial socioeconomic differences between urban and rural areas.

Some improvement of economic-production ties can be obtained on the basis of the already existing mechanism of complex operation, by means of partial improvement thereof, elimination of disproportions, etc. The main directions of improvement of economic-production ties amount to the following. It is imperative for the quantitative and qualitative levels of ties to conform with those stipulated for the complex to perform its main function, that of meeting in full the public's demands for foodstuffs, clothing and shoes. Analysis revealed that their actual levels are lower than required. On the one hand, there is incomplete satisfaction of agriculture's needs with regard to basic productive capital, production services and work tools (mineral fertilizers, toxic chemicals, mixed feed, spare parts, etc.), as well as highly skilled manpower; on the other hand, agriculture cannot yet fully meet the requirements for raw material for the processing industry and foodstuffs for the public in accordance with scientifically substantiated standards. But, even if it is impossible to achieve the required quantitative level, the problem arises of optimizing the system of ties. This problem can be solved by optimizing the territorial intersectorial macrostructure of production and services of the complex by means of a system of mathematical economic models. The system of models must adequately reflect the goal of the complex, alternatives for reaching it, criteria for selection of alternatives and the process of reaching the goal. Modeling makes it possible to determine the interrelated development of all elements of the complex and quantitative value of intersectorial ties with the specified restrictions of resources.

Economic-production ties can perform their function satisfactorily if the quantity and quality of products and services involved in intersectorial exchange conform with the requirements of the partners involved. Unfortunately, the quality of products and services of intersectorial exchange is still not good enough. Thus, the reliability of tractors and agricultural machines does not always conform with current requirements; production and delivery thereof do not always conform with the optimum proportion of power machines [plants?] and operating machines. The mixed feed supplied to agriculture does not guarantee the increment in animal productivity set by the standards, while mineral fertilizers and agrochemical services do not assure the required increase in harvest. The technical repair services do not provide for complete readiness of the fleet of machines and tractors. Agricultural raw material does not conform entirely to the quality specifications, etc. An improvement of the quality of products and services of intersectorial exchange can be obtained only by introducing standards for all products, incentives for upgrading quality and creating the necessary material and technical base for quality control.

The quantitative and qualitative disproportion of intersectorial ties is, in part, the result of insufficient and uncoordinated development and disposition of the material and technical base of the partners involved, as

well as lack of coordination of their economic interests. Such lack of coordination is particularly manifest in development of production of agricultural raw material and the material-technical base of its procurement, transportation, storage, processing and sale. With the growth of the material and technical base of agriculture and higher level of its industrialization, the problem of coordinating and disposition of the material and technical base of sectors referable to technical-production maintenance has beome particularly acute. Development and disposition of this base are lagging behind the needs of agriculture. For this reason, the road toward elimination of disproportions is through close mutual coordination of development of sectors and industries in a common long-term special-purpose program for the complex and elaboration of an adequate management mechanism for its operation.

The efficiency of operation of the entire complex depends largely on the forms of organization of intersectorial ties. The latter can emerge in the form of trade, management, direct and intraindustrial ties. In the case of trade ties, the conditions for delivery of goods are completely coordinated only at the time of purchases and sales. In the case of management ties, the conditions for delivery to the producer and consumer are established by plan by the supplies and sales organization. Direct ties are based on coordination of all important conditions for delivery, directly between producers and consumers. Intraindustrial ties are referable to diverse intersectorial agroindustrial associations. There, the delivery conditions are determined in the course of preparation of a single production plan and coordinated with regard to all engineering, volume and time parameters. Each of the forms of organizing the function of intersectorial ties has numerous modifications and has certain advantages for either the producer or consumer, each is applicable under specific conditions and provides for a specific effectiveness.

Planned management does not rule out the existence of trade ties based on wholesale or small-scale wholesale using the resources of industry, and this opens up vast possibilities for taking into consideration the mutual requirements and economic interests of partners. The use of direct ties is limited, first of all, to agriculture, the processing industry, procurement and trade.

Intraindustrial ties are the most promising and progressive forms of intersectorial ties. They not only provide for comprehensive consideration of mutual requirements, but integration of economic interests. Processes of agroindustrial integration were already present in the 1930's, but they underwent broad development only in the 1970's. Agroindustrial integration consists of economic-management association of agrarian, industrial, trade and other economic elements into a single whole, the agroindustrial economic system oriented toward meeting specific demands. A distinction is made between three main types of agroindustrial integration, depending on the level of economic hierarch: interindustrial [interproduction], territorially intersectorial and intersectorial.

Interproduction agroindustrial integration refers to economic-management association of agrarian, industrial, trade and others involved in adjacent stages of the technological process, as well as enterprises that service them and organizations that meet public demands for some type of product. Territorial intersectorial agroindustrial integration refers to economic-management association of industrial, agrarian, trade and other sectors related to production or implementation of production of a specific end product and located in a circumscribed territory. Intersectorial agroindustrial integration is the economic-management association of agrarian, industrial and other sectors, plants and management formations into an integrated intersectorial system directed toward satisfaction of public needs for foodstuffs, clothing and shoes, and which develops in accordance with a single program. Interfarm cooperation, which refers to cooperation among kolkhozes, sovkhozes and enterprises, organizations and production associations that they have formed in the course of satisfying the needs of their end products, is an intermediate process on the way to agroindustrial integration.

All of the above-listed forms of agroindustrial integration lead to formation of different structural elements of an agroindustrial complex, i.e., formation of economic-management structure of the complex. Thereby, a transition occurs from a technological-production system to an economic-management system.

When analyzing various forms of organization of implementation of intersectorial ties, the problem is to select the most effective ones, which are consistent with the content of integration processes.

The scale of development of intersectorial exchange is constantly widening in the course of industrialization of agriculture, and this means that the problem of assuring equivalent exchange on the basis of an exact record of socially necessary labor for the production of goods and delivery of services is acquiring increasing importance. The economic conditions of exchange affect formation of net profit in agriculture, as a source of accumulation and cost-account incentives for development of the latter.

Economic-production ties of the agroindustrial complex must create the necessary conditions for equivalent exchange between agriculture and industry, between urban and rural areas.

It is expressly this objectively determined need that V. I. Lenin had in mind when he wrote: "... We are setting as our task the return to the peasants [farmers] of what we received as a loan from them, in the form of wheat.... We must return this loan by means of organizing industry and furnishing its products to the peasants."*

*V. I. Lenin, "Complete Works," Vol 40, p 109.

The equivalence of intersectorial exchange can be submitted to a thorough study only within the framework of the process of expanded reproduction of the agroindustrial complex as a whole. The intersectorial report balance of the national product, which reflects completed processes of reproduction, established proportions in distribution and use of the national product by different fields of activity, sectors and the state, the output of sectors and fields, is the tool used to analyse the process of expanded reproduction.

Thus far, the conditions of intersectorial exchange have not been in favor of agriculture. The prices for extramural services and extrasectorial resources are rising faster than the purchasing prices for agricultural products. As a result, the rate of growth of material expenditures is significantly faster than the rate of growth of gross sectorial production; the profitability of kolkhoz and sovkhoz production decreases; the indebtedness on long-term loans issued by the USSR Gosbank is increasing, in spite of repeated write-offs. All this generates serious difficulties in organizing cost-accounting of kolkhozes and sovkhozes, and it slows down the rate of expanded reproduction there. The number of kolkhozes and sovkhozes with low profit indicators and losses is not decreasing, in spite of growth of labor productivity. The cost of the main types of products is increasing. The chief causes of the existing situation are referable to inadequate orientation of the objectives of sectors of the complex toward its ultimate national economic results, absence of a management mechanism to which the sectorial objectives of achieving the general goal of the entire complex would be completely subordinated.

One can find the resources for creating such a mechanism by analyzing the interrelations between agriculture and the field of procurement, transportation, storage, processing and selling its products.

Formation of economic-production ties in the system of the agroindustrial complex between the stages of production, procurement, processing and selling products, at each phase of development of productive forces, is determined by the system of distribution of material resources.

In his work, "The Next Tasks for Soviet Power," V. I. Lenin formulated the task of setting up "... the extremely complex and subtle [delicate] network of new organizational relations covering planned production and distribution of products...."* In our country, there has been development of planned control of national production designed to satisfy the needs of society as a whole, and a basically new system of economic-production ties in the national economy has been created, including the system of the agroindustrial complex which is oriented toward planned production and distribution. At the July (1978) and November (1979) plenums of the CC CPSU, the task was raised with particular emphasis of continued improvement of relations in the agroindustrial complex, and this is attributable to objective causes, first of all changes in level of productive forces.

*V. I. Lenin, "Complete Works," Vol 36, p 171.

In this period of development of the scientific and technological revolution, ever increasing specialization and ever rising level of concentration of production, significant expansion and complication of intersectorial ties, the main problems of continued improvement and increased effectiveness of foodstuff production are primarily intersectorial. The most important ones are as follows: balanced development of agricultural production and the material-technical base of the area of procurement, transportation, processing, storage and sale thereof; elimination (reduction) of quantitative and qualitative loss of agricultural products due to poor development of the industry that processes this raw material, warehouse and refrigeration management, transportation, shortage of warehouses, as well as lack of roads; fuller use of agricultural raw material and useful substances it contains; more even seasonal procurement and processing of many types of agricultural products and uninterrupted supply of foodstuffs to the public; increased production of foodstuffs that are mostly ready for consumption and in a form that is convenient for transportation, storage and sale.

There are two subcomplexes in our country whose function is to solve these problems: for foodstuffs and fabric production, clothing and shoes.

Balanced coordination of production capacities of the light, food, meat-dairy industry and capacities of procurement organizations with the required volume of agricultural raw material is a most important element in improving economic-production ties in the agroindustrial complex. With such coordination, there must be complete conformity of production capacities of industrial enterprises with the planned volume of delivery of agricultural products, complex and effective processing of this raw material, as well as utmost use of production capacities of the processing industry and rational distribution thereof.

However, it has not yet been possible to achieve the proper balance in development of production of agricultural products and capacities pertaining to procurement processing, storage and sale thereof. As a result, the national economy is sustaining great losses. For example, in spite of expansion of the material and technical base for grain storage, kolkhozes and sovkhozes are short of facilities for storage of 23 million tons of grain per year. In 1978, only 50.5% of the farms' requirements for standard storage facilities were met. A comparison of the rate of growth in volume of cattle and milk purchases to the rate of build-up in capacities for processing thereof in 1965 and 1978 revealed that there was an 82.8% increase in volume of cattle purchases in 1978, and 56.1% in milk purchases, as compared to 1965, whereas the capacities of enterprises engaged in processing these products increased by only 29.2 and 22.3%, respectively, in this time. This has an adverse effect on the process of procurement and sale of cattle and milk, leading to loss of valuable agricultural products.

One of the important means of developing the material and technical base of procurement, processing, storage and sale of fruit, vegetables and

potatoes is to use containers for harvesting, transporting and storing these products. With containerized transportation of products there is a reduction of manual labor to less than one-third and of overall labor to less than one-half, as compared to the old way. The economic effect of using containers, with consideration of the cost of preserved products, is 7 rubles per ton.

The question of bringing the material and technical base for storage closer to areas where potatoes, fruit and vegetables are grown must also be resolved. Locating storage facilities at the farms will make it possible to supply consumers with high-grade potatoes, vegetables and fruit in the winter and spring, as well as reduce losses and nonstandard products. However, the farms do not have large-enough storage facilities to keep these products for a long period of time. The warehouses they do have are usually small: the average capacity of a potato warehouse does not exceed 382 tons at sovkhozes and 157 tons at kolkhozes; the capacity of vegetable storehouses is 268 and 213 tons, respectively.

Great difficulties developed in the procurement system with regard to facilities for storing vegetables, fruit and potatoes. Thus, availability of vegetable and potatoe storehouses in consumer cooperation organizations constitutes about 15% of the capacity needed, and for storage of fruit the figure is 18%.

At the present time, storehouses have active ventilation and artificial cooling. Storage of fruit and vegetables in actively regulated gas environments is in wide use. However, the creation of a broad network of refrigerators involves large capital and energy expenditures.

In this regard, the method of storing fruit, vegetables and potatoes with the use of electron-ion technology is very interesting; it reduces losses during storage to almost one-quarter. This technology of storage can be used in ordinary storehouses, as well as on all types of vehicles when fruit, vegetables and potatoes are transported.

One of the means of increasing the effectiveness of production, procurement, processing and sale of agricultural products is the continued development and strengthening of ties between agricultural enterprises and those that process their raw material, and with trade organization. Direct purchasing of fruit, vegetables and potatoes, as well as at the place they are produced, with use of transportion resources of procurement enterprises to haul them away, is very economical for the farms: they are relieved of expenses to deliver these products. This also releases the farm vehicles and workers, who can be used directly for agricultural work. When the products are shipped out using transportation of procurement enterprises from the areas where they are prepared and concentrated at the farms, the cost for transportation per ton of product is reduced by 10-12%. The effect of improving the quality of fruit and vegetables when sold via direct ties constituted 11.8 million rubles in 1977 and 56.6 million rubles in 1978.

It would be expedient to develop cost accounting associations for the production, storage and processing of potatoes, in order to reduce losses and deliver the potatoes to the consumer that are of the best quality and with preservation of nutrients.

The existing interrelations between farms and grain-receiving enterprises must be improved. The procedure in effect at the present time for setting the monetary price charged by grain-receiving enterprises to kolkhozes and sovkhozes for services dealing with grain preparation does not take into consideration the actual expenses: payment for these services is set as a percentage of production cost. Studies of this matter, which were conducted in several oblasts of RSFSR, revealed that the payments made by farms for drying and cleaning grain were 3.2 times greater than the actual expense for this work. It is imperative for such charges to kolkhozes and sovkhozes to conform with actual expenses, plus an amount to assure an optimum level of profitability.

With the improvement of fattening livestock at kolkhozes and sovkhozes, as well as organization of direct delivery thereof to meat-packing plants, it is now time to relegate the functions of livestock purchasing organization to enterprises of the meat industry and to establish direct contractual relations between agricultural enterprises and meat-packing plants. In this regard, the sovkhozes engaged in fattening livestock within the Skotoprom system should be relieved of organizing cattle purchases and delivery thereof to enterprises in the meat industry, and they should direct their activities toward organizing cattle raising and fattening (on the example of Donmyasoprom and Kuban'myasoprom).

To implement receipt of milk according to grade, it became necessary to equip enterprises of the dairy industry with additional lines. Most dairy enterprises do not have such lines. Putting milk of different grades in the same container has an adverse effect on the quality of products and does not cover the state's expenses for payments of additional sums to farms for high-grade milk.

The established interrelations between agricultural enterprises and the field of procurement, processing and sale of their products require the development of scientifically substantiated contractual relations, aimed at strengthening and developing cost-accounting principles. It is imperative to arrange for new forward contracts and conditions for delivery and receipt of agricultural products.

There must be elaboration of intersectorial complex programs for assuring preservation and rational use of agricultural products (of each type) at all stages, from production to consumption, in order to assure balanced development of agriculture and the area of procurement, processing, storage and sale of its products, as well as to coordinate the actions of different agencies.

Studies of economic-production ties between agriculture and other sectors of the agroindustrial complex, and development of suggestions for improving them will aid in continued development of all sectors in this complex and growth of its national economic end results.

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AGRICULTURAL PRODUCTION IN CENTRAL CHERNOZEM ZONE REPORTED

Based Upon a Complex Approach

Krasnodar SEL'SKIYE ZORI in Russian No 5, May 80 pp 15-17

[Article by V. Ignatov, 1st Secretary of the Voronezhskaya Oblast CPSU Committee and Member of the CPSU Central Committee]

[Excerpts] The new obligations of the Voronezh farmers call for a further increase in the production of field products. This year the grain yield will reach 25 quintals per hectare.

As a result of measures already undertaken, the next step in agricultural development has been taken. Compared to the Ninth Five-Year Plan, the annual gross output volume increased by 9.3 percent. Grain production increased by 205,000 tons, sugar beets -- by 1.5 million tons, meat -- by 29,000 tons, milk -- by 60,000 tons and eggs -- by 80 million.

At the same time, we were unable to implement everything that was planned and conceived. Notwithstanding a certain amount of growth in the production of farming and animal husbandry products, the oblast did not fulfill the directive tasks of the five-year plan.

The two unfavorable years and particularly the last one reflected even more clearly the areas of unfinished work and incidents of neglect and they underscored the principal cause -- insufficient attention given to the land and failure to observe the agrotechnical requirements. Some of our farms are not carrying out the entire complex of measures aimed at combating erosion, the crop rotation plans and the soil cultivation system are not being followed, large areas are being sown using low quality seed, organic fertilizers are not being employed to the desired degree and the schedules for carrying out the field work are being dragged out.

An increase in the gross yields of grain continues to be an object of special concern by the oblast party organization. During the years of the

Tenth Five-Year Plan, the grain fields were expanded by almost 100,000 hectares and at the present time they include 1.8 million hectares, or 57 percent of the arable land. The winter grain crop areas have increased considerably in size. More than 1 million hectares, or two times more than is usually the case, were sown in behalf of this year's harvest. Measures are being undertaken to apply mineral fertilizer top dressings to all of the winter crop plantings. The socialist obligations for the final year of the five-year plan call for an average grain yield of 25 quintals to be obtained. During the Eleventh Five-Year Plan, the grain yield must be raised to 26-28 quintals per hectare and a gross grain yield on the order of 4.5-5 million tons obtained.

In order to reduce the feed protein deficit and in addition to other measures, the kolkhozes and sovkhozes have begun expanding their plantings of peas. The pulse crop areas have been increased to 251,000 hectares. This has been promoted to a considerable degree by the increasing deliveries, by industry, of specialized harvesters for the harvesting of pulse crops. The plans call for the plantings of these crops to be increased by 50,000 more hectares in the near future, at which point they will occupy up to 10 percent of the arable land. And this, as is well known, will at the same time solve the problem concerned with improving the predecessor crop arrangements.

Permit me to add a few words concerning sugar beets. In 1976 the oblast's farms expanded their sugar beet plantings sharply, increasing them to 250,000 hectares. Time has proven that this measure was fully justified. During 4 years of the Tenth Five-Year Plan, 15 million tons of roots were sold to the state -- 3.3 million more tons than were sold during the entire preceeding five-year plan. And although the overall task remained unfulfilled, still there is every reason for believing that the kolkhozes and sovkhozes will reach the planned level.

It is generally known, for example, that one efficient means from the standpoint of more rapid return is that of optimization of the field work schedules and observance of a complex of agrotechnical measures. Row crops occupy a portion of the sown fields in our oblast. The harvesting of these crops coincides with the period for preparing the soil and planting the winter crops and carrying out autumn plowing. Meanwhile, the capabilities of the machine-tractor pool are not ensuring the timely carrying out of these operations. Naturally, the harvesting work and especially fall plowing are dragged out under these conditions. In short, the stage is set for shortfalls in the following year's harvest operations.

For our part, measures are being undertaken to reduce the field work schedules. In particular, the experience accumulated by the Ipatovo workers in connection with large-group usage of equipment is being employed in all areas. A program is being implemented for training, retaining and improving the skills of machine operators. However, the high workloads for the harvesting equipment and the shortage of powerful row-crop tractors

preclude the possibility of obtaining the desired output and lead to considerable crop losses. Thus the workload for one of our grain combines is 190-200 hectares, the average for a farm for one "Kirovets."

We are quite aware that the state's resources are still limited and we are not relying upon a sharp increase in capital investments, fertilizers of herbicides. At the same time, it is obvious that existing planning practice should be reexamined and, by means of a reduction in the number of general purpose tractors, the deliveries of powerful K-701 type machines should be increased to our zone and particularly to beet growing kolkhozes and sovkhozes.

All of the oblast's work collectives have responded very well to the appeal by the party to make the year 1980 a year of shock work and work carried out in the Leninist manner. The workers in Voronezhskaya Oblast are applying all of their energy, knowledge and experience to making worthy preparations for the 26th party congress and to successfully carrying out the plans for this year; they are creating a reliable foundation for a confident start of the Eleventh Five-Year Plan.

Means of Local Reserves

Krasnodar SEL'SKIYE ZORI in Russian No 5, May 80 pp 21-22

[Article by A. Ponomarev, chairman of the Belgorodskaya Oblast Executive Committee]

> [Excerpts] The plans call for the Belgorod farmers to obtain no less than 28 quintals of grain and 220 quintals of sugar beets per hectare this year.
>
> New reserves for raising the fertility of the arable land and the productivity of the public herds are being placed in operation.

The average annual gross output volume for agriculture in our oblats during the Tenth Five-Year Plan increased by 9 percent above the figure for the Ninth Five-Year Plan and increases took place in the production of grain, sugar beets, vegetables and in the procurements of milk, eggs and wool. But owing to the fact that a number of farms and rayons did not make full use of the potential that was available for increasing the production of agricultural products, the state was undersupplied by Belgorodskaya Oblast to the tune of 426,000 tons of grain, 2.1 million tons of sugar beets, approximately 34,000 tons of meat and 70,000 tons of milk. Recognizing fully their responsibility in this matter, the party, soviet and economic organs are undertaking measures aimed at ensuring not only fulfillment of the 1980 plans as outlined but also compensation for output shortfalls already experienced.

A great amount of attention has been concentrated on increasing the production of grain, as listed among the party's requirements for solving the food problem and creating a reliable feed base for animal husbandry.

In the structure of the area under crops, the grain crop area is being expanded to 57 percent (56 percent). High yield varieties are being introduced on an extensive scale, use is being made mainly of first class seed and mineral and organic fertilizers must be applied. Initially the plans called for no less than 26 quintals of grain to be obtained per hectare. Considering this goal to be minimal, the agricultural workers reexamined their plans and they now intend to achieve a grain yield of 28.5 quintals and to raise their gross grain yield to 2.7 million tons. Such yields were obtained in 1976. This will enable us to offset some of the debt incurred in the sale of grain and create the required seed and forage funds. Since winter grain crops in our areas furnish 5-6 more quintals of grain than spring grain crops, we expanded the winter grain crop growing area to 600,000 hectares. This is 22 percent more than the average area sown during the years of the Tenth Five-Year Plan.

Measures have been undertaken throughout the oblast aimed at increasing considerably the production of grain corn. The sowing area for this crop amounts to no less than 80,000 hectares. Seed has been procured for this purpose and mechanized teams, all of which have studied the leading methods employed for obtaining high yields, have been created on each farm.

The oblast has been criticized quite fairly for dereliction in the production of groat crops: the kolkhozes and sovkhozes failed to supply the state with adequate quantities of millet and buckwheat. This year the best land has been set aside on all of the farms for the growing of these crops, no less than 3 quintals of mineral fertilizers will be applied per hectare and the growing of the crops will be entrusted to the best machine operators.

In agriculture, as is well known, a great deal depends upon the initial processing of the products, carried out immediately following the harvest operations -- drying, sorting, cleaning. In order to intensify the positive effect of these factors, a grain threshing floor with grain cleaning units was built at each kolkhoz and sovkhoz. Throughout 1978, drying units produced at industrial enterprises located within the oblast were installed and placed in operation at all of the farms. Their productivity is such that they are capable of drying all of the grain obtained by the combines during a 24 hour period. In this manner we have eliminated a number of harvest problems and we have eased the anxieties of the leaders and specialists with regard to inclement weather conditions -- in the past they often had to delay the harvest operations when confronted by even light rainfall and this of itself caused considerable crop losses.

The farms in our oblast have been entrusted with great responsibility in connection with the production of sugar beets. During the Tenth Five-Year Plan the average annual yield of beets increased by 25 percent and beet procurements by 28 percent, compared to the ninth five-year period. Yet we were still unable to fulfill the plans for 4 years for selling the sweet roots to the state. An especially great shortfall -- almost 1.5 million tons -- occurred last season. In order to correct the situation which developed, our beet growers have resolved this year to obtain no less than 220 quintals of sugar beets per hectare and to sell no less than 3.4 million tons to the state. During the autumn all of the areas were prepared, top dressings of mineral and organic fertilizers were applied to them, mechanized teams were established and all of the beet growers studied the leading experience that was available on cultivating this crop in Belgorodskiy and Krasnogvardeyskiy rayons, the farmers of which are annually over-fulfilling their plans for selling beets to the state.

The status of affairs with regard to sunflower production has been analyzed thoroughly at all of the kolkhozes and sovkhozes and measures are being implemented aimed at ensuring the unconditional fulfillment of the sunflower procurement plans.

The workers in Belgorodskaya Oblast, under the direction of the oblast party organization, will beyond any doubt ensure fulfillment of the planned tasks in the development of agricultural production, as they continue to do everything possible to prepare in a worthy manner for the 26th CPSU Congress.

Work for Harvest Completed

Krasnodar SEL'SKIYE ZORI in Russian No 5, May 80 pp 24-25

[Article by N. Zhurkin, chairman of the Kurskaya Oblast Executive Committee]

> [Excerpts] The farmers in Kurskaya Oblast are fully prepared for the spring period of the final year of the Tenth Five-Year Plan. All of the work completed has been in behalf of the harvest and particularly that for the grain fields and beet plantations.
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> This year the oblast will sell to the state no less than 1.6 million tons of grain, 4.34 million tons of sugar beets and 165,000 tons of vegetables and potatoes.

We are clearly aware that under conditions involving raised requirements for food products, with the land areas remaining essentially the same, the chief problem becomes that of raising the fertility of the soil and achieving more efficient use of each hectare of land. All of the efforts of the rural workers must be directed towards solving this problem. First of all, very serious attention must be given to the use of organic fertilizers. The oblast's farms are applying less than 5 tons of farmyard manure and no more than 3.7 quintals of mineral fertilizer per hectare of arable land. Many

of the skilful use of mineral and organic fertilizers could be cited. At the Zarya Kommunizma Kolkhoz in Korenevskiy Rayon, Rossiya Kolkhoz in Kyl'skiy Rayon, Rodina Kolkhoz in Sovetskiy Rayon and the imeni Frunze Kolkhoz in Belovskiy Rayon and the Krasnooktyabr'skiy Sovkhoz in Glushkovskiy Rayon, which are located in different zones of the oblast, 0.8 quintals of mineral fertilizers are being applied in combination with organic fertilizer to a hectare of arable land and even during unfavorable years such as the past one, this is sufficient for ensuring a grain yield on the order of 30-35 quintals, sugar beets -- 350-450 and corn for silage -- 400-500 quintals.

The insufficient technical equipping of the farms continues to be a restraining factor. Owing to a shortage of grain combines, the workload being imposed upon the existing pool remains high just as in the past -- 200 hectares per machine. When we consider that in recent years the output per combine has not exceeded 8 hectares per day, it is apparent that the oblast's grain harvest will continue for up to a month, with the farms losing a large quantity of grain. At least, this is how the oblast's machine operators evaluated the powerful K-701 tractor. But there are only slightly more than 300 such units at 510 kolkhozes and sovkhozes. The 1980 requirements for these tractors have been satisfied by only 25 percent. Moreover, the tractors that are being made available do not always have a complete set of agricultural machines. Owing to a shortage of transformer capacities, the power-worker ratio amounts to only 1,644 kilowatt-hours annually, or two times less than the figure for the RSFSR.

Just as in the past, grain production continues to be a most important sector of work for the party, soviet and agricultural organs and for all agricultural workers in the oblast. The plans for 1980 call for 25 quintals of grain to be obtained per hectare and for the production of 2.7-3 million tons of grain. Good conditions prevail for this taking place. Winter grains have been planted on 600,000 hectares, or 52 percent of the overall grain area. They were sown following the best predecessor crops and during the best periods and winter agricultural measures have been carried out. During the spring period, the plans called for a top dressing of mineral fertilizer to be applied to the winter crops. A great deal of work has been carried out in connection with raising the cropping power of the spring grain crops. Autumn plowing was carried out on the entire area. A large portion of the spring grain crops will be sown simultaneously with an application of mineral fertilizer and during the best agrotechnical periods. The farms will be using their own seed. At the present time, 95 percent of this seed has been raised to 1st and 2d class sowing condition.

The workers in Kurskaya Oblast are attaching special importance to the work of developing the beet production branch. Almost 200,000 hectares of the best arable land is being set aside annually for use in the cultivation of sugar beets. Extensive logistical and labor resources are concentrated here. However, there are many serious shortcomings in this complicated branch and for this reason the oblast has been subjected to just criticism.

The party, soviet and agricultural organs are undertaking measures aimed at intensifying the production of beets. The sugar beets for this year's harvest were planted following good predecessor crops and 12.5 quintals of mineral fertilizer were applied to each hectare during the principal plowing operation. A program is being followed directed towards introducing into operations, on an extensive scale, industrial methods for the growing of this crop. All organizational and political work is aimed at ensuring that 4.34 million tons of sugar beets will be sold to the state this year.

And we are confident that the workers on the farms, similar to the farmers themselves, will honorably fulfill the plans and obligations of the final year of the five-year plan and worthily prepare for the forthcoming 26th CPSU Congress.

Principal Direction -- Specialization

Krasnodar SEL'SKIYE ZORI in Russian No 5, May 80 pp 27-28

[Article by G. Pavlov, Member of the CPSU Central Committee and 1st Secretary of the Lipetskaya Oblast CPSU Committee]

[Excerpts] In the production of grain, a program is being followed aimed at raising the cropping power of all of the crops. This year the oblast's kolkhoz and sovkhoz workers have vowed to obtain 23 quintals of grain and to raise the gross yield to 2.2 million tons. A definite amount of work was carried out last year in this regard. More than 5 million tons of organic fertilizer were transported and applied to the kolkhoz and sovkhoz fields. Winter crops were sown for the very first time on 550,000 hectares, including approximately 100,000 hectares of clean fertilized fallow. The sowing work was carried out during the best agrotechnical periods. The plants emerged from the snow in a well developed state, having endured the winter in a normal manner. Snow retention work was carried out on the entire area of winter crops. In the early spring, a top dressing will be applied to 490,000 hectares of winter crops, with the root method being employed on 60,000 hectares. Autumn plowing was carried out on all of the spring crop fields. All of the farms had their own seed, 90 percent of which was of 1st or 2d class quality.

The areas used for the more productive and promising varieties were increased considerably: Moskovskaya-35 spring wheat, Uladovskiy-8 peas, L'govskiy-78 and Gorizont oats, Nutans-244 barley and Mironovskoye-94 millet. Thus it will be possible next year to convert over to mass sowings for these crops.

In the interest of supplementing the protein balance, the decision was made to expand the sowing area for pulse crops from 60,000 to 100,000 hectares. During the sowing of spring grain crops, no less than 2 quintals of mineral fertilizer will be applied to each hectare. The plans call for an increase in the production of groat crops. A more intense campaign will be launched

against weeds and agricultural pests and diseases and extensive use will be made of the group method of equipment utilization and the Ipatovo method for organizing sowing and harvesting operations.

The problem concerned with increasing the gross yields of sugar beets will be solved by converting over to an industrial technology. Rich experience has been accumulated in Dobrinskiy and other rayons in the mechanized cultivation of this crop, with reduced expenditures of manual labor. Last year there were 45 teams in operation on farms in Dobrinskiy Rayon and 270 quintals of the sweet roots were obtained per hectare. This enabled the rayon to fulfill its plan and to sell 281,000 tons to the state. Throughout the oblast as a whole, this technology was employed by 300 teams and the results of their labor proved to be better than usual.

Three hundred complexes of additional equipment for wide-cut beet sowing machines and cultivators were produced at industrial enterprises in Lipetsk and other cities. Two hundred more complexes are presently being produced. The experience of such leading machine operator-beet growers as the Sinyachkin brothers, Kolesnikov, Krutskikh and others is being studied extensively on all of the beet growing farms. The autumn plowing in behalf of the sugar beets was carried out during the best periods. Distinct from past years, one half of the predecessor crop areas was treated with herbicides and 12 quintals of mineral fertilizer applied. Autumn cultivation and levelling off of the soil were carried out on all of the fields. This year special attention will be given to observing the optimal plant density per hectare.

Ample opportunities exist for correcting the problems that exist in the production of beet seed. The plan for laying away 115 million roots was fulfilled. Never before have we procured such a quantity. The winter storage of the roots took place in a normal manner. The prescribed mineral fertilizer norm was applied in behalf of the mother beets and seed-plant beets. The beet growing sovkhozes were supplied with considerable quantities of specialized equipment and grain harvesting combines.

The plans call for the cropping power and grain yields of sunflowers to be increased by raising the level of the agricultural practices being employed, by assigning the oil-producing plantations to the care of mechanized teams and by applying 3-4 quintals of mineral fertilizer per hectare.

The oblast's kolkhozes and sovkhozes have made fine preparations for the spring field operations. The readiness of the equipment and transport vehicles is considerably higher than in past years.

The party, soviet and agricultural organs and all workers in Lipetskaya Oblast are doing everything possible to ensure that the final year of the Tenth Five-Year Plan is distinguished by successful fulfillment of the socialist obligations.

Improved Agriculture in Oblast

Krasnodar SEL'SKIYE ZORI in Russian No 5, May 80 pp 33-34

[Article by Ye. Podol'skiy, chairman of the Tambovskaya Oblast Executive Committee]

> [Excerpts] This year the agricultural workers in Tambovskaya Oblast have vowed to obtain 23 quintals of grain and no less than 180 quintals of sugar beets per hectare.
>
> Measures are being undertaken at all of the kolkhozes and sovkhozes aimed at eliminating the lag that has developed and fulfilling the plans and socialist obligations.

The principal path to be followed for improving agriculture in the oblast consists of implementing decisive improvements in the culture of farming and, on this basis, increasing the production of grain, technical crops, vegetables and cattle feed.

A maximum amount of attention is being given to solving the key problem -- increasing the production of grain.

This year, 3.1 million tons of grain must be obtained -- 23 quintals from each hectare. A definite foundation has been created for this purpose. The fall plowing was carried out completely. More winter grain crops were sown than that called for in the plan and the status of these crops is satisfactory in all areas. A top dressing will be applied to all of the winter crop plantings in the early spring, with the progressive root method being used on 25-30 percent of these crops. The plans call for the spring grain crops to be sown using only 1st or 2d class seed of regionalized intensive varieties, with granulated superphosphate being applied simultaneously to the rows.

Work was carried out throughout last in connection with improving the structure of the area under crops, introducing scientifically sound crop rotation plans. Within the grain crops, the sowings of high yield winter crops have been expanded. Improvements are being realized in the agricultural practices used in cultivation of the crops and the plans call for increases in the cropping power of the groat crops and for fulfillment of the plans for state procurements of millet and buckwheat.

During 4 years of the current five-year plan, despite the fact that the average annual yields of sugar beets increased by 30 percent above the figure for the Ninth Five-Year Plan, the production level for the beets continues to remain low. This year, for the first time in recent years, the sugar beets will be sown on a considerable area following the winter crops, which were planted on well fertilized clean fallow. The beets will be cultivated on these areas using a progressive technology and with minimal

expenditures of manual labor. The following task must be carried out -- sow the sugar beets during the best periods, simultaneously with the sowing of the early spring crops and during 40-50 working hours, reduce the schedules for developing the planting densities, provide for proper tending of the crops so as to ensure that no less than 180 quintals of roots will be obtained from each hectare and sales of 2.25 million tons of beets to the state.

The oblast's kolkhozes and sovkhozes are under an obligation to the state in connection with the procurements of oil-bearing sunflower seed. As a result of crop rotation plan violations, failure to observe the varietal structure and a low level of agricultural practices, the cropping power of this crop has not risen in recent years and the established plans for procurements have not been fulfilled. Scientifically sound recommendations which will bring about improvements in the cropping power of sunflowers are presently being implemented at the kolkhozes and sovkhozes.

The greatest results can be obtained from organic fertilizers when they are combined with mineral fertilizers. However, we are still applying only small amounts of mineral fertilizer -- an average of 64 kilograms of active agent per hectare of arable land. Following fertilizer applications in behalf of sugar beets, potatoes, vegetables and irrigated lands, almost nothing remains for the grain and forage crops. According to estimates by the scientific-research institutes and the agrochemical service, the oblast's kolkhozes and sovkhozes require a minimum of 1.5 million tons of mineral fertilizer annually. For this current year, the oblast's farms received less than 50 percent of their requirements. Last year, only 64 percent of the plantings were cultivated using mineral fertilizers. Moreover, complete fertilizer norms were not employed and one third of the plantings were not supplied with any fertilizer whatsoever. Under such conditions, it is difficult to obtain stable yields, especially during dry years. We are expecting a considerable increase in mineral fertilizer deliveries to our zone during the Eleventh Five-Year Plan.

Within the oblast there are 946,000 hectares, or 41.8 percent, of acid soils which are in need of liming. Defecation mud obtained from our sugar plants is being used for this purpose and yet it is in extremely short supply -- lime is needed.

The agricultural workers in our oblast have undertaken high socialist obligations with regard to increasing the production and procurements of agricultural products during the final year of the Tenth Five-Year Plan and they are diligently continuing their work aimed at carrying out these obligations and worthily preparing for the 26th party congress.

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CSO: 1824

FILLING AND CROPPING TECHNOLOGY

FALL IN MILLET CROP YIELDS CRITICIZED

Moscow PRAVDA in Russian 19 May 80 p 3

[Article by A. Platonshkin, special PRAVDA correspondent from Aktyubinskaya Oblast: "The Heritage and the Heirs." For related material see JPRS 75981 of 2 July 1980, No 1240 of this series pages 121-125.]

[Excerpts] Many participants in the discussion "A Duty to the Field" started by the Chistyakov brothers have noted that in agriculture it is essential to improve the organization of labor and wages. I agree. However, what, in my opinion, is most lacking is attention to the experience of generations of plowers. Here is a specific example. In the stores it has become difficult to buy buckwheat or millet. We are told that the yield of the grain crops was low. Or there are no good varieties. But certainly many realize that Chugunak Bernlyev has grown up to more than 100 quintals of millet per hectare, although the possibilities this time were much meager. So, the farmers of the older generation, have learned from the master and followed him.

We getting in heard about such achievements. I would like to know just what is the attitude toward the Bernlyev records and how the heritage of Chugunak is being used.

D. Puzikov
Khar'kov

(From a letter to the editors)

The Aktyubinsk farmers are now planting over 140,000 hectares under millet. Its yield is low. For example, in 1979, 4.1 quintals. The kolkhozes and sovkhozes should supply the state with 60,000 tons of millet. Last autumn grain production was 54,200 tons. Need it be said that the answer to the question of the PRAVDA reader is not comforting.

"In western Kazakhstan, the plantings dried up in places," explained the party obkom secretary T. Ashin.

Whatever reasons could be given, the main thing still is in the people, in their expertise and their understanding of their responsibility for the overall success. The communists do not avoid these concerns. Thus, over the last more than 7 years, the obkom, in relying upon the scientific institutions and the best practical workers, has acquainted around 10,000 rural leaders and specialists and regular workers with advanced labor practices on the fields and farms.

Even the initiative of the obkom, 14 millet-growing teams have already been organized on the farms. But at present the rayon holds one of the last places in terms of the production and sale of grain crops. The land for this crop is poorly worked and is done last. But what about the teams and what is their role here? They have been set up only in formal terms. The crop was planted and then forgotten until the autumn. But it is precisely at the beginning of development that millet can become the victim of weeds.

As we see there have been few changes. If one does not count another decision of the obkom and oblast executive committee: "To work out and implement measures to sharply increase the yield and production of millet on a scale providing for the fulfillment of the plans and the socialist obligations for the sale of it to the state in 1980." As yet the attempts to raise the role of the party organization and the collective of the agricultural experimental station in increasing the millet yield have not been crowned with success.

The force of the decisions does not lie in their quantity. Rather the practical return is the important thing. At the same time constant concern for indoctrinating the personnel, strengthening labor discipline and control over what was planned are frequently replaced by the party committees and economic leaders with the formal approval of organizational or technical measures. In the countryside there are specialized teams, brigades and complexes. The movements "A Reliable Guarantee for the Crop," "Not a Single Hectare Nearly," and "A Quality Mark for the Field" are being encouraged. Behind the smokescreen of many innovations and undertakings, at times it is difficult to see their usage, to select and disseminate what is actually important. A Chapayev Prize has been established. The head of the agricultural department of the party obkom V. Filipenko for a long time could not remember to whom the prize was presented and for what achievements just a year ago.

Streets and streets have been named after the famous millet raiser. Are they to be the worthy successors of his deeds resound from the rostrums of various rallies and conferences. But this is so much gloss. The very essence of Berlyavev's records is unknown to many farmers. One can learn a little something about the master's experience in the oblast regional museum. The creative heritage of Chapayev in his homeland has become an archive and not an arsenal. Moreover, for some leaders and specialists it would be an obstacle: how explain why the land has ceased producing.

"Remember, you won't see more even these fields," I was told by the workers of the oblast agricultural administration.

At the same time, great crops with careful tending at present produce a good harvest. The collective of the 40 Let Kazakhskoy SSR Sovkhoz last autumn harvested 17 quintals of millet in round figures. As a whole, the farms of Aktyubinskiy Rayon had 11.2 quintals from each of the 7,700 hectares. This is not the limit, but almost 3-fold higher than the average oblast indicator. Some 5,198 tons of the valuable grain was sold to the state. This was 1.5-fold more than the annual plans.

Of course, there are also difficulties. Precision drills are needed but they cannot be found. This spring, for planting millet, ordinary grain drills had to be resquipped. There are few herbicides and material incentives have not been properly organized. But the readers are right. The farmers and the aktiv now have a great deal. Above all a growing physical plant, crop rotation and a soil-protecting system. Only why bother with a difficult crop? Take wheat instead of groats.

There is plowing and long fallows.... The problem is not only one of groats. The attitude toward other crops, even wheat, is scarcely better. Wheat is less troublesome and for this reason the neglect of the plowman is not immediately apparent. The point here is not to blindly copy the experience of predecessors. Farming practices and the scale of production could and should have changed since the times of Bersiyev. Such values as a love for the land, and dedication to the cause are immutable. A man, the poet has said, is fed by grain, but initially the field is fed by his sweat and wisdom.

By sweat and wisdom. And probably here lies the chief secret of Bersiyev's achievement. "Strength of reason, agility of hands, labor and health--all we give to you, motherland!" For Chagamak this was not a flowery phrase but a basic position. Asan Ospanqulov, his colleagues and contemporaries have everything to equal the glory of their fathers and grandfathers. If they are helped in understanding and caring for their field, and if they devote to it not time but rather their life.

In the center of the village of Karatal is a monument to Bersiyev. The sower carefully holds a sheaf of millet in his outstretched arms. It looks as though Chagamak were wondering to whom the precious burden should be given. Let us hope that it will fall in the proper hands and the grains of his own wisdom will produce an abundant crop.

[illegible]
[illegible] 1984.

PROD 'SH, PROBLEMS OF KAZAKH MILLET CROP DISCUSSED

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 4 Jun 80 p 2

[Article by V. Syzdykov, first secretary of the Maynkly raykom in Pavlodarskaya Oblast: "The Millet Growers are Competing"]

[Text] Recently the last drills left the millet fields. In previous years, our farmers did not carry out the work so quickly. And although the farmers have long planted millet on the lands which here are little suited for other grain crops, a great deal had to be revised, particularly in organizational terms. First of all we assigned our cleanest fields to this valuable grass which is extremely sensitive to weeds. Almost one-half of the plantings were set out on fallow and as much along the furrow of perennial grasses and semifallow, and it for the first time has been put under millet.

The sowing dates have also been changed. For some reason the opinion had taken hold that the later you plant millet the better. Supposedly it was a heat-loving crop. But what happened? The seed must be planted at a depth of just 4-5 cm and not the 7-8 cm used for wheat. If there is a little delay in sowing, the grain falls on dry ground, and is not quick to sprout and put down roots. Just look at our fields today. Many of them are completely green. I feel that these eye-pleasing sprouts will last through the June heat. And the teams of millet raisers are providing the proper tilling.

In being in the fields, I can see how earnestly the equipment operators watch their sections. Now just try to force them to plant before the land has matured and is cleared of weeds. Nothing of the sort. The millet growers teams have been operating in the rayon for the second year now. They are headed by the best masters of the grain field, by communists, the candidacies of whom are discussed and approved at a session of the raykom bureau. In being responsible for the end result and obtaining a wage in accord with it under the job-bonus system, they operate with great independence, interest and exactingness not only for themselves but also for the leaders.

last autumn, the team of Dyunek Topunov, the initiator of the rayon competition of millet growers, harvested an average of 17.7 quintals per hectare, and each team member received over an additional thousand rubles for an above-planned yield. The team of his follower from the Kazanskiy Sovkhoz, Vasiliy Shan'ko, earned 6,400 rubles for the additional product. And each of the team members of Grigoriy Miklkov at the Zhaltyrskiy Sovkhoz received 1,888 rubles. As a whole, Maynskiy Rayon which occupies lands that are of the fourth and fifth category and little suitable for grain growing, received over 5 million rubles of profit from the millet, some three-quarters of the total income from crop raising.

At present at the bureau we have newly approved 20 millet-raising teams. The success of the last harvest brought forward new initiators of the competition for a high harvest of the great crop. These are our most experienced grain growers Vladimir Kirillovich Vershinin from the Sputnik Sovkhoz and Ivan Vasil'yevich Sadneprovskiy from the Zhaltyrskiy Sovkhoz. And it is a pleasure to see in this group the hereditary virgin land farmers and talented millet experts Amangel'dy Al'menbetov from the Kzyl-Kuraminskiy Sovkhoz, Aleksandr Knol' from the Belogorskiy Sovkhoz, and Nikolay Telegig from Chapayevskiy Sovkhoz. It is their obligation to produce at least 17.3 quintals of millet per hectare.

For the first time the farms of the rayon passed all the seed grain through the cleaning plant located at the 30 Let Kazakhskoy SSR Kolkhoz. As a result, only seed of the first and extra class was planted. Everywhere the seed was planted with disc drills. They maintain the depth more accurately, and most importantly leave an interrow space of 16 cm, while the distance is 22 cm for the stubble drills. The narrow width leaves less room and chances for the survival of bristle grass and other weeds, and makes it possible to distribute the plants more evenly. With the meager moisture and humus in our lands this is an important factor.

The harvest gains instill confidence in the future crop. However it would be greater and the harvests higher if concern for the great crops was shown not only in the rayon. It is well known how scarce millet has become, but at the same time it still remains unfertilized. "Give us superphosphate so that we could grow it with seed in rows, and we could raise the yield by 1.5--fold," Dyunek Topunov has requested repeatedly. Others have also entered such requests. We would be glad to help, but the orders of Maynskiy Rayon are not satisfied. There is scarcely enough allocated fertilizers for the corn and potatoes.

There is also a problem with the disc drills. For some reason for several years the State Committee for Agricultural Equipment has not supplied this irreplaceable unit for the millet growers. There are great opportunities for increasing millet production, and our aim is to mobilize them.

TILLING AND CROPPING TECHNOLOGY

BELORUSSIAN INCENTIVES FOR BUCKWHEAT CROP DESCRIBED

Minsk SEL'SKAYA GAZETA in Russian 15 May 80 p 1

[Unattributed article: "For a High Buckwheat Harvest"; this article also appeared in (Minsk) SEL'SKOYE KHOZYAYSTVO BELORUSSII No 6, Jun 80 p 1]

[Text] The central committee of the KPB [Belorussian Communist Party], the Belorussian Council of Ministers, Belsovprof [Belorussian Trade Union Council] and the Belorussian Komsomol Central Committee have approved a decree "On the Republic Socialist Competition Among Agricultural Workers for Increasing the Production and Procurement of Buckwheat Grain."

For awarding the oblasts, rayons, kolkhozes, sovkhozes and other state agricultural enterprises which are winners in the republic socialist competition for increasing the production and procurement of buckwheat grain, nine rotating Red Banners of the KPB Central Committee, the Belorussian Council of Ministers, Belsovprof and the Belorussian Komsomol Central Committee have been established with money prizes, including:

For the oblasts, one banner with a money prize of 3,000 rubles;

For the rayons, four banners with money prizes of 2,000 rubles each;

For the kolkhozes, sovkhozes and other state agricultural enterprises, four banners with money prizes of 1,000 rubles each.

The winners in the designated republic socialist competition are considered to be the oblasts, rayons, kolkhozes, sovkhozes and other state agricultural enterprises which have achieved the highest yields, fulfilled the plans for the production and sale to the state of buckwheat grain, and which have achieved the greatest increase in the gross harvest in comparison with the preceding year.

The obligatory conditions for determining the winners in the republic socialist competition are also the enlarging on each buckwheat-raising farm of the areas planted by buckwheat to at least 80 hectares, and the providing of the farms with high-quality buckwheat seed for the future year's harvest, including laying in and an emergency stock.

The Belorussian Ministry of Agriculture, the KPB obkoms, gorkoms and raykoms, the oblast and rayon executive committees, the republic, oblast and rayon trade union committees of agricultural workers, the Belorussian Komsomol obkoms and raykoms, the party, trade union and Komsomol organizations of the kolkhozes, sovkhozes and other state agricultural enterprises must develop the socialist competition among all the rural workers for raising the harvest yield, for increasing production and procurement, and reducing the cost of the buckwheat grain.

The Belorussian State Committee for Television and Radio Broadcasting, the editors of the republic, oblast and rayon newspapers must systematically take up in the press, television and radio the course and results of the republic socialist competition among the agricultural workers for better organizing the growing of high buckwheat harvests and for increasing the production and procurements of this crop's grain.

GREATER KAZAKH BUCKWHEAT PLANTINGS URGED

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 5, May 80 p 21

[Article by B. Baitin and T. Agipova of Tselinogradskaya Oblast: "Buckwheat for the Fields of the Republic"]

[Text] Buckwheat is a very valuable groat crop. It is basically grown for producing buckwheat groats, a product with high nutritional value and good taste qualities. It is also one of the best honey plants and under normal conditions can produce up to 90-100 kg of honey per hectare.

The value of buckwheat also is that it develops quickly and suppresses the shoots of a majority of the weed plants; it has an important biological feature and a short growing season.

All the same the demand of the public for buckwheat groats is far from fully satisfied. The average annual buckwheat harvests during the Ninth and Tenth five-year plans were below the levels of 1940 and 1966-1970.

The task of further increasing the production and procurement of buckwheat grain can be solved in expanding its planted areas in those rayons where in terms of yield it comes close to the other grain crops.

In 1978, buckwheat occupied an area of 259,500 hectares in our republic, or 14.4 percent of the total buckwheat area in the country. The gross grain harvest was 97,000 tons, unfortunately, only 10 percent of the gross harvest in the USSR. The yield was low, some 3.8 quintals per hectare. This is very, very little.

In a report at a republic conference of agricultural workers on 17 March 1978, Comrade D. A. Kunayev, member of the Politburo of the CPSU Central Committee and first secretary of the Central Committee of the Kazakhstan Communist Party, noted: "The republic possesses great possibilities for the production of buckwheat and millet.

"It is essential to decisively rectify the situation with the growing of these great crops...."

Virtually all the buckwheat plantings of Kazakhstan are located in the northern oblasts: 120,000 hectares in Pavlodarskaya Oblast, 75,600 in Kustanayskaya, 10,600 in Severo-Kazakhstanskaya, with around 1,000 hectares in Kokchetavskaya, Turgayskaya and Tselinogradskaya oblasts.

More than one-half of the buckwheat-growing sovkhozes raise it on areas up to 400 hectares. On those farms where the buckwheat plantings are under 100 hectares, it is grown as a honey plant. Some 80 kolkhozes grow buckwheat permanently. A study of their operations over a 3-year period excludes random results related to meteorological conditions. The sovkhozes were grouped according to five soil and climatic subzones of Northern Kazakhstan. In moving from the north to the south, from the first to the fifth zones, the proportional amount of buckwheat plantings grows. For example, in the first zone, the planted area under buckwheat is 0.8 percent of all the cereals, and wheat is 64.1 percent, and in the second zone, correspondingly, 1.4 and 77.4. In the third, fourth and fifth zones, buckwheat occupies 9.5 percent, 10.9 and 12.9 percent. The share of spring wheat correspondingly declines.

The basic reason from the far from complete use of the potential opportunities to increase the buckwheat yield lies in the low level of farming practices for this crop. This crop, as a rule, completes a crop rotation and is planted after poorer preceding crops, and receives little organic and mineral fertilizers. On many farms, proper tending of the crop and pollination of the plants by bees have not been organized, the buckwheat plantings are broken up and there is a low level of concentration. For example, in the first, most favorable subzone, buckwheat is grown annually by three sovkhozes in Severo-Kazakhstanskaya Oblast: Novo-Mikhaylovskiy in Mamlyutskiy Rayon, and Karaguginskiy and Suvorovskiy in Bulayevskiy Rayon. At the first sovkhoz, the average planted area over these years was 53 hectares in contrast to 166 hectares at the Karaguginskiy Sovkhoz. In terms of the yield level, they also differ. At the Suvorovskiy Sovkhoz, the buckwheat harvest per hectare was 11.4 quintals, 10.4 quintals at the Karaguginskiy Sovkhoz, and 9.3 quintals at the Novo-Mikhaylovskiy Sovkhoz.

In the same subzone, on virtually the same areas and with the same growing conditions for the buckwheat, farms can be found where the yield is 7-fold less. For example, at the Veselopodol'skiy Sovkhoz in Kustanayskaya Oblast, on an area of 257 hectares, the yield was 1.9 quintal, while at the Mar'yevskiy Sovkhoz in Severo-Kazakhstanskaya Oblast, from each of 200 hectares they harvested 13.3 quintals of buckwheat grain.

As a whole in Northern Kazakhstan, buckwheat is a good crop. The profitability of its production is 58.25 percent, while for the basic crop of the region, wheat, it is 48.56 percent.

The practice of many farms indicates that the pollination by bees alone increases the buckwheat harvests by 3-4 quintals per hectare, and covers all the expenses on delivering the hives to the planted areas and bringing them back.

Unfortunately, bee keeping has been very little developed on the sovkhozes of Northern Kazakhstan. This is particularly true in Pavlodarskaya Oblast. It is no accident that here the average buckwheat yield in 1976-1978 was just 3.2 quintals per hectare, in contrast to 9.3 quintals in Kokchetavskaya Oblast, where there were 11.7 bee colonies per hectare of buckwheat, in contrast to 0.05 in Pavlodarskaya Oblast. For this reason the accelerated development of bee keeping is an indispensable question for raising the buckwheat yield.

At present, in Northern Kazakhstan, just one buckwheat variety, Bogatyr', is grown, and this produces a low yield. For this reason the zone of the northern oblasts in the republic requires high-yielding buckwheat varieties.

There is the opinion that wheat is the best preceding crop for buckwheat. But the experience of the leading farms indicates that it is economically better to grow buckwheat after potatoes. Thus, on the Medvezhenskiy Sovkhoz in Severo-Kazakhstanskaya Oblast, after potatoes buckwheat produced a crop of 17.8 quintals per hectare, and after cereals which were the second crop after fallow, just 11 quintals. This means that buckwheat requires fertile lands which are well fertilized and clear of weeds.

The elimination of the designated shortcomings and the concentrating of plantings up to rational amounts in the individual subzones will lead to an increase in buckwheat production in the republic.

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BRIEFS

KAZAKH MILLET CROP--Now the weather has seemingly decided to arrange a test for endurance, self-control and mastery for the virgin land farmers. In May, there was virtually no precipitation in the Kustanay Steppe. However we feel that there is enough supplies of winter moisture for the normal development of the cereals until the first rains. But still the unusual 35-degree heat for these times, the dry winds, and now the northwesterly squalls have caused anxiety among the grain growers. Intensive evaporation of the soil moisture supplies is occurring. During years which are bad in terms of weather conditions, and particularly in dry years, the farms growing millet are in a beneficial position. In Kustanayskaya Oblast, it presently occupies a much larger area than before. Many years of experience have shown that this valuable crop in the southern rayons of the oblast produces good crops in any years. In practice we have been convinced that millet is a valuable, advantageous crop for the virgin land farms. In increasing its production, we are creating reserves of food resources. And we must be properly concerned with this crop. V. Movchan, director of the Rassvet Sovkhoz, honored agronomist of Kazakhstan. Taranovskiy Rayon, Kustanayskaya Oblast. [Excerpts] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 4 Jun 80 p 2] 10272

NEW BUCKWHEAT VARIETY--Since 1979, a new variety of tetraploid buckwheat "Iskra" has appeared on the fields of the republic. This variety has 32 chromosomes. This is the first tetraploid variety which has been regionized in our country, and it was developed at the Belorussian Scientific Research Institute for Agriculture. One might wonder what bearing the number of chromosomes has on the harvest? It turns out, a most direct one. As is known, buckwheat is among the crosspollinating plants. Crosspollination occurs chiefly with the help of bees and to a smaller degree by other insects. Reciprocal crosspollination of diploid and tetraploid buckwheat plants does not lead to the formation of grain, and the set soon dies. This causes a great grain shortfall. At present, on the farms, in addition to the tetraploid variety "Iskra" they also cultivate the diploid varieties "Yubileynaya-2," "Terekhovskaya," "Chernoplodnaya," and others. In no instance can they be planted close to "Iskra." The distance between them should be at least 500 meters in an open area or separated by a forest. It is best to plant buckwheat of the "Iskra" variety on one farm as the

sole variety, otherwise there can be a mixing of the seed and grain of the tetraploid and diploid varieties in planting, harvesting and storing. The failure to observe these biological features can significantly reduce the buckwheat grain crop. N. Mukhin, doctor of agricultural sciences. [Text] [Minsk SEL'SKAYA GAZETA in Russian 13 May 80 p 2] 10272

KAZAKH MILLET PLANTINGS--This year the republic should significantly increase the production and procurement of such valuable food crops as potatoes, vegetables, millet and buckwheat. While the plans are being fulfilled for potatoes and vegetables, for the groat crops, in recent years there has been a great indebtedness, and their crops have been extremely low. An analysis of the state of affairs indicates that the reason for the shortfall of the millet and buckwheat is to be found in the neglect of proper farming methods for raising them. At the same time, the experience of the leading farms affirms that it is possible to obtain steady harvests of these valuable groat crops. Everything depends upon the organization. At present millet in the republic is planted on an area of 825,000 hectares, and buckwheat on 180,000. Their plantings have been increasing, and now there is the crucial task of obtaining a high harvest. And for this it is essential to organize proper tending of the plantings. KAZAKHSTANSKAYA PRAVDA has described the experience of growing these crops on the leading farms of Aktyubinskaya, Pavlodarskaya and Kustanayskaya oblasts, where permanent crop teams are engaged in growing the groat crops, starting from the sowing and ending with the harvesting. Their experience should be widely applied. Only then can we count on success and achieve stable harvests. [Excerpt] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 18 Jul 80 p 1] 10272

MORE MILLET, BUCKWHEAT IN KAZAKHSTAN--In Kazakhstan millet occupies 825,000 hectares and buckwheat is cultivated on 180,000 hectares. This is more than in past years. Now the main task is to attain an abundant yield of these crops. For this proper crop care is necessary. The best agricultural enterprises in Aktyubinskaya, Pavlodarskaya and Kustanayskaya Oblasts have great experience in cultivation of these crops. Here permanent working groups are involved with cultivation of groat crops. Their experience is worthy of widespread emulation. [Text] [Tselinograd FREUNDSCHAFT in German 23 Jul 80 p 1]

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